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ABSTRACT

A comparative analysis of staff allocation in the six Australian States, the Australian Capital Territory, and New Zealand, this report describes existing structures and policies at the education system level and identifies innovative policies worthy of further examination. After an explanation of the background and conceptual framework of this study, the changing structures of the education systems over the past decade are discussed, particularly the devolution of authority to schools, including greater responsibility for curriculum development and administration, and the movement toward administrative decentralization of the Australian systems. The following chapters describe variations in the size and structure of schools among the systems studied, and the number and characteristics of teachers and other staff. A chapter on the allocation of personnel resources to government schools discusses the mechanisms of staff allocation and the formulae determining allocations. Teacher salary costs are detailed, and the final chapter offers policy options in response to pressures for change. Recommendations include coordination of different sectors of education systems, further devolution of administration to regional offices, progress toward more appropriate structure and size of schools, school-based curriculum development, and greater school authority for staff selection. Appendixes include classification of teachers and notes to the numerous tables. (MJL)

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ACER Research Monograph No. 16

EIGHT EDUCATION SYSTEMS:

RESOURCE ALLOCATION POLICIES IN THE GOVERNMENT SCHOOL SYSTEMS OF AUSTRALIA AND NEW ZEALAND

Staffing and Resources Study Report No. 1

Phillip McKenzie
John P. Keeves

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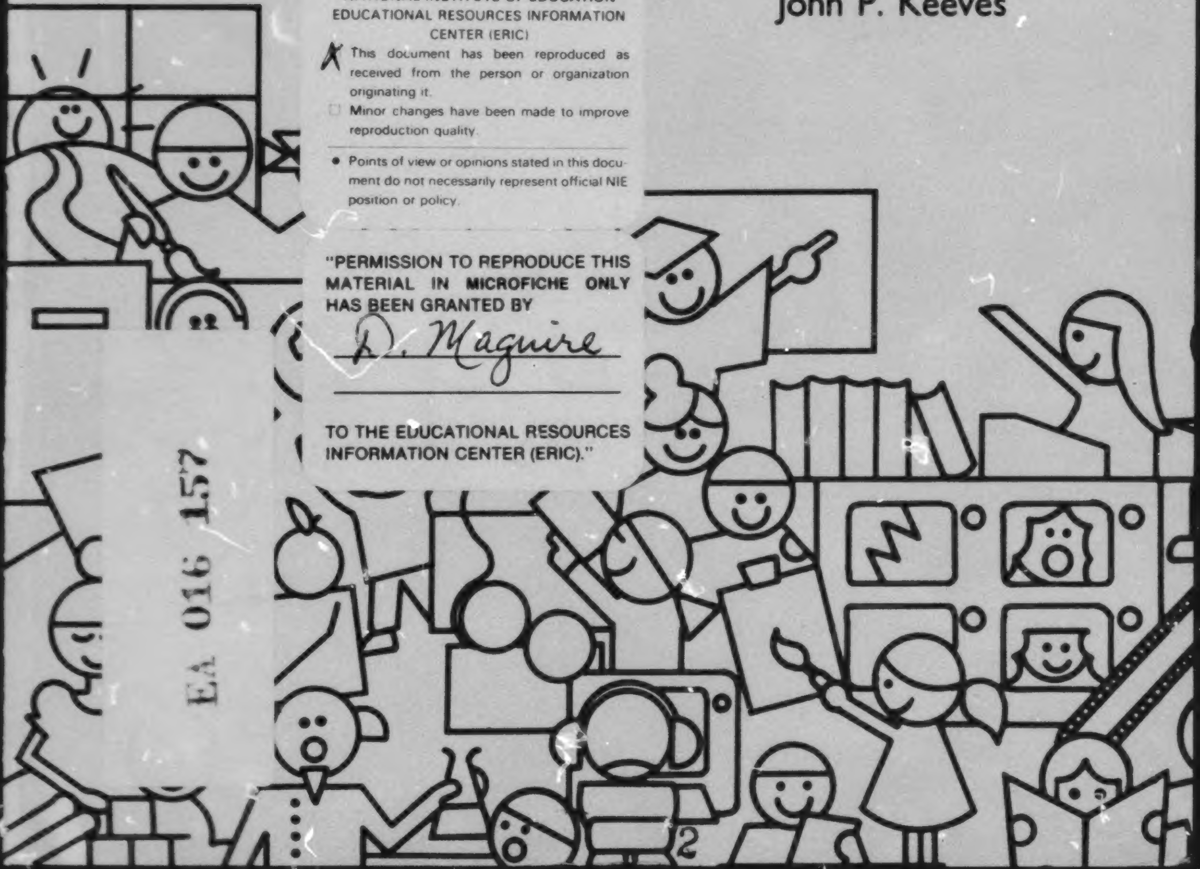

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CONTENTS

Page

LIST OF TABLES v

LIST OF FIGURES ix

ACKNOWLEDGMENTS x

CHAPTER 1 THE STAFFING AND RESOURCES STUDY 1
- Background 1
- Elements of the Study 2
- Conceptual Framework for the System Level Study 6
- Conduct of the System Level Study 9
- A Broadening in the Expectations for Schools 11

CHAPTER 2 THE CHANGING STRUCTURES OF THE EDUCATION SYSTEMS 16
- Introduction 16
- Changes of the Past Decade in Administrative Structures 17
- Regionalization of Administration 28
- Decentralization and Resource Deployment 34
- Decentralization and Change 35

CHAPTER 3 THE SCHOOLS: THEIR SIZE AND STRUCTURE 39
- Age of Entry to Primary School 39
- Pre-school Education 42
- The Structure of the Primary Schools 47
- Transition To and Progress Within the Secondary School 49
- Retention Rates 52
- Types of Schools 57
- School Structure: An Elaboration 63
- Distinctive School Structures 66
- Size of Schools 71
- Some Concluding Comments 77

CHAPTER 4 TEACHERS AND OTHER PERSONNEL RESOURCES 80
- Types of Education Personnel 80
- Personnel Numbers 81
- Teachers in the Government Education Systems 86
- Projected Enrolment Changes During the 1980s 91
- The School Resources Debate 94
- Current Structure of the Teaching Service 101

CHAPTER 5 THE ALLOCATION OF PERSONNEL RESOURCES TO GOVERNMENT SCHOOLS 110
- Allocative Mechanisms 110
- Formulae Allocation to Schools: Teachers 111
- The Configuration of Teachers in Schools 121
- The Above-Formulae Allocation of Teachers to Schools 136
- The Allocation of Support Staff to Schools 149
- In Conclusion 151

Page

CHAPTER 6 THE OPERATING COSTS OF GOVERNMENT SCHOOLS 153
  The Role of Cost Studies in Education 153
  The Measurement of School Costs 153
  Size of School: Cost Implications 156
  School Type: Cost Implications 167
  Changing Enrolment Patterns: Cost Implications 169

CHAPTER 7 SOME POLICY OPTIONS 171
  Introduction 171
  Pressures for Change 171
  Some Guiding Principles for Change 175
  The Administrative Struture of the Education Systems 177
  The Structure and Size of Schools 181
  The Allocation of Resources to Schools 185
  In Conclusion 190

REFERENCES 192

APPENDIX I GUIDELINES FOR THE PREPARATION OF THE SYSTEM LEVEL REPORTS (On Microfiche)

APPENDIX II CLASSIFICATION OF TEACHERS 199

APPENDIX III DETAILED NOTES TO TABLES 3.2, 3.6, 5.1 AND 5.4 205

LIST OF TABLES

Page

Table 2.1 Number and Size of Education Regions in the Government School Systems of Australia and New Zealand, 1979 29

Table 2.2 Distribution of Staff In Central and Regional Offices in South Australia as at June 1979 30

Table 3.1 Pre-School Education: Proportion of Children Enrolled in the Year Before School Entry. Australian States and Territories, 1977 and Territories, 1977 and New Zealand, 1978 44

Table 3.2 Number and Age Distribution of Children Engaged in Pre-Primary and Early Primary Programs in Several States and New Zealand, 1979 46

Table 3.3 Average Age by Year of School in the Government Schools of Australia and New Zealand, 1964 and 1979 48

Table 3.4 Retention Rates in Government Schools and All Schools for Students Apparently Remaining to Years 10, 11 and 12 (Australia), 1981; Forms 5, 6 and 7 (New Zealand), 1980 54

Table 3.5 Retention Rates in Government Schools for Students Apparently Remaining to Year 12 (Australia) and Form 6 (New Zealand) by Sex for Years 1970-1981 55

Table 3.6 Types of Government Schools and Enrolments. Australia and New Zealand, 1979 58

Table 3.7(a) Distribution of School Size by School System, Australia 1979 72

Table 3.7(b) Percentages of Government Primary and Secondary Schools of Particular Sizes in New Zealand 1979 73

Table 3.8 Average School Size Weighted by Student Enrolment Distribution, Australia 1979 77

Table 4.1 Numbers of Personnel Employed by Government School Systems Per 1000 Students, Australia, August 1979 82

Table 4.2 Public Expenditure Per Student, Australian Government School Systems (except Queensland), 1978-79 84

Table 4.3 Enrolments in Government Primary and Secondary Schools, Australia and New Zealand, 1972 to 1981 87

Table 4.4 Numbers of Primary and Secondary Teachers (full-time equivalents) in Government Schools in Australia and New Zealand, 1973 to 1981 88

Page

Table 4.5 Student Teacher Ratios in Government Schools in Australia and New Zealand, 1972 to 1981 89

Table 4.6 Indicies of Recurrent Resource Expenditure in Government Schools of the Australian State Systems in Relation to Schools Commission Targets for Years 1972, 1976 and 1979 89

Table 4.7(a) Projected Enrolments by Government School Systems and Sector. Australia, 1980 to 1990 92

Table 4.7(b) Projected Population By Selected Age Groups, New Zealand 1981 to 1990 92

Table 4.8 Classified Positions of Teachers in Australian Government Education Systems, August 1979 100

Table 4.9 Proportion of Teaching Positions Held by Female Teachers, Australian Government Education Systems, August 1979 104

Table 4.10 Age Distribution of Government School Teachers, Australia 105

Table 4.11 Age Distribution of Australian Teachers, 1963 and 1979 106

Table 4.12 Median Ages of Classified Government School Teachers, Victoria, 1972 to 1978 107

Table 4.13 Distribution of Government School Teachers by Length of Pre-Service Course, Australia, 1979 107

Table 5.1 Formula Allocation of Teachers to Primary Schools 1980 112

Table 5.2 Formula Allocation of Teachers to Primary Schools 1980, Functional Form 115

Table 5.3 Formula Allocation of Teachers to Primary Schools 1980. Student-Teacher Ratio by Enrolment Level 116

Table 5.4 Formula Allocation of Teachers to Secondary Schools 1980 118

Table 5.5 Formula Allocation of Teachers to Secondary Schools 1980, Functional Form 119

Table 5.6 Formula Allocation of Teachers to Secondary Schools 1980. Student-Teacher Ratio by Enrolment Level 120

Table 5.7(a) Formula Allocation of Teachers to Primary Schools. Classification of Teachers, Australian Capital Territory, New South Wales and Victoria, 1980 124

		Page
Table 5.7(b)	Formula Allocation of Teachers to Primary Schools. Classification of Teachers, Queensland, South Australia and Western Australia, 1980	125
Table 5.7(c)	Formula Allocation of Teachers to Primary Schools. Classification of Teachers, Tasmania and New Zealand, 1980	126
Table 5.8	Formula Allocation of Teachers to Primary Schools. Ratio of Assistants to Promotion Positions, Australia and New Zealand 1980	127
Table 5.9	Balance of Specialist and Other Teachers, Government Primary Schools of Australia and New Zealand, 1979	128
Table 5.10(a)	Formula Allocation of Teachers to Secondary Schools. Classification of Teachers, Australian Capital Territory and New South Wales, 1980	130
Table 5.10(b)	Formula Allocation of Teachers to Secondary Schools. Classification of Teachers, Victoria, Queensland and South Australia, 1980	131
Table 5.10(c)	Formula Allocation of Teachers to Secondary Schools. Classification of Teachers, Western Australia, Tasmania and New Zealand, 1980	132
Table 5.11	Formula Allocation of Teachers to Secondary Schools. Ratio of Assistants to Promotion Positions, Australia and New Zealand, 1980	133
Table 5.12	Balance of Specialist and Other Teachers, Government Secondary Schools of Australia, 1979	135
Table 5.13	Relation Between School Enrolment and the Proportion of Teachers Allocated By Staffing Schedule. Australian Government School Systems, 1979	148
Table 6.1(a)	Formula Allocation of Teachers. Relation Between School Enrolment and Annual Teacher Salary Costs, Australian Capital Territory 1980	157
Table 6.1(b)	Formula Allocation of Teachers. Relation Between School Enrolment and Annual Teacher Salary Costs, New South Wales 1980	157
Table 6.1(c)	Formula Allocation of Teachers. Relation Between School Enrolment and Annual Teacher Salary Costs, Victoria 1980	158

Page

Table 6.1(d) Formula Allocation of Teachers. Relation Between School Enrolment and Annual Teacher Salary Costs, Queensland 1980 158

Table 6.1(e) Formula Allocation of Teachers. Relation Between School Enrolment and Annual Teacher Salary Costs, South Australia 1980 159

Table 6.1(f) Formula Allocation of Teachers. Relation Between School Enrolment and Annual Teacher Salary Costs, Western Australia 1980 159

Table 6.1(g) Formula Allocation of Teachers. Relation Between School Enrolment and Annual Teacher Salary Costs, Tasmania 1980 160

Table 6.1(h) Formula Allocation of Teachers. Relation Between School Enrolment and Annual Teacher Salary Costs, New Zealand 1980 160

Table 6.2 Formula Allocation of Teachers to Primary Schools. Indices of Teacher Salary Costs Per Student, Australia and New Zealand 1980 162

Table 6.3 Formula Allocation of Teachers to Secondary Schools. Indices of Teacher Salary Costs per Student, Australia and New Zealand 1980 164

Table A.1 Staffing and Resources Study: Classification of Resources (On Microfiche)

Table A.2 Teacher Classifications and Salary Levels, Australia and New Zealand 1980 201

LIST OF FIGURES

Page

Figure 1.1 Proposed Paradigm for Investigation in the Staffing and Resources Study 4

Figure 1.2 Framework for the System-Level Component

Figure 2.1 Aspects of the Devolution of Responsibility 8
for Curriculum Development in the Government Education Systems of Australia and New Zealand 22

Figure 2.2 The Devolution of Administrative Responsibilities to Government Schools in Australia and New Zealand, 1979 26

Figure 2.3 Administrative Responsibilities Devolved to Education Regions in Australia and New Zealand as at August 1979 30

Figure 5.1(a) Formula and Survey Lines of Best Fit, Australian Capital Territory and New South Wales, 1979 142

Figure 5.1(b) Formula and Survey Lines of Best Fit, Victoria and Queensland, 1979 143

Figure 5.1(c) Formula and Survey Lines of Best Fit, South Australia and Western Australia, 1979 144

Figure 5.1(d) Formula and Survey Lines of Best Fit, Tasmania and New Zealand, 1979 145

Figure 5.1(e) Formula and Survey Lines of Best Fit, New Zealand, Intermediate Schools, 1979 146

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CHAPTER 1

THE STAFFING AND RESOURCES STUDY

Background

In 1978 the Australian Council for Educational Research (ACER) was commissioned by the Australian Education Council (AEC) to undertake a study of staffing and resources in the government school systems of the six Australian States, the Australian Capital Territory, and New Zealand.

The following terms of reference were prepared and submitted to the ACER to guide the design of the study.

1 To examine existing policies, procedures and trends relating to the allocation of staff and resources to and within Australian and New Zealand schools.

2 To inquire into difficulties faced by school systems and schools in allocating staff and resources to and within schools.

3 To examine measures that are being taken at the present time at various levels to overcome these difficulties.

4 To review new developments and alternative arrangements in staffing schools.

5 To recommend action which can be taken by schools and school systems to improve existing arrangements or overcome problems experienced in staffing schools.

6 To recommend appropriate field studies or action research projects which school systems can carry out and which will enable the trying out of creative and practical ways of reorganizing staff at the school level.

7 To develop proposals which school systems in the longer term might adopt for the future direction of policies and procedures concerning the allocation of staff and resources to and within schools.

In addition, during the course of 1978 it was suggested that the following contemporary issues related to the terms of reference could be considered in the study:

1 The balance between primary and secondary staffing allocations.

2 The determination of staffing formulae.

3 Alternative methods of staffing in the use of aides, specialists, ancillary staff, and part-time teachers.

4 Teacher work load and non-contact time.

5 Flexibility in deploying staff within schools.

6 Implications for staffing policy of various philosophies and methodologies of teaching.

7 Effects of alternative staffing arrangements.

8 System awareness of, and responsiveness to, the needs of individual schools.

9 Regionalism and staff allocation principles and procedures.

The study commenced on 1 February 1979. To assist and guide ACER, a Technical Committee was formed which comprised the ACER research team, a representative from each of the eight participating education systems, and two other persons. The membership of the Technical Committee is included in Appendix I.

The Technical Committee assisted during the first half of 1979 to focus upon the issues of concern to the study. Of major importance in this process was the preparation by each of the participating education systems of a list of those aspects of the allocation of staff and resources to schools which were seen as problems. The purpose of this exercise was to provide guidance for the design of the survey of school resources (Ainley, 1982), the case studies of schools (Sturman, 1982), and the preparation of the system-level reports which form the basis of this volume. The ACER research team prepared a taxonomy of the issues listed by the systems, and sought views from the education systems on the priority to be accorded to these issues. Understandably, the range of issues perceived as important by systems was large and priorities differed. Overall, however, it was possible to prepare a taxonomy of those aspects of the allocation of staff and resources to schools which most systems agreed needed to be addressed in the study. A summary of these issues is provided below.

1 External Frame Factors

- working within staff ceilings
- coping with changes in the age and geographic distribution of the population

2 System Structure and Management

- determining the optimum size range of schools
- determining appropriate degrees of devolution
- assessing school needs
- estimating school enrolments
- predicting staffing requirements

3 Teaching Staff

- coping with a perceived decline in the attractiveness of teaching as a career
- adjusting to shortages of teachers in specialist areas
- matching staff with school programs
- allowing for limitations on teacher movement between schools
- coping with demands on teachers for extra-curricular duties
- coping with demands on teachers for special attention to transition programs
- assessing the effects of limited growth upon teacher morale
- providing outside work experience for teachers
- overcoming problems in induction
- providing time release for primary teachers
- motivating continuing professional development
- assessing the positive and negative effects of in-service education

4 Support Personnel

- examining the balance of teachers and support staff

5 School Organization and Curriculum

- examining the class size issues
- allowing for curriculum autonomy
- examining appropriate staff structures

This list of resource allocation issues is by no means exhaustive but rather represents those areas which were commonly mentioned as worthy of consideration. It was obvious that a single study could not hope to address all of these issues, or even a reasonable number of them, in sufficient depth to provide a firm basis for policy initiatives. This view was reinforced when it became clear that the study would not be able to collect data which examined the impact of alternative structures and resources upon students and teachers.

Consequently, it was necessary to be selective in the choice of issues to be addressed by the study. From the taxonomy of problem areas listed above, four reasonably distinct, though inter-related, clusters of issues were identified: administrative structures of the education systems; the structure and size of schools; personnel allocation policies; and means of encouraging the continuation of high quality teaching and other educational services in the schools. It is these issues which are addressed in the remainder of the report.

Elements of the Study

The terms of reference for the study and the detailed listing of areas of concern to the education systems necessitated a design which examined the issue of staffing and resources at two levels. The first of these was at the level of school systems and involved a study of those policies that allocated staff and resources to schools. The second level was that of the school and involved a study of the resource allocation practices within schools.

School systems are defined as the systems of government primary and secondary schools administered by the State Departments of Education in the six Australian States, the Australian Capital Territory Schools Authority and the New Zealand Department of Education. The government school system of the Northern Territory was not included in the study and references in this report to 'the Australian government school systems' should be read with this qualification in mind.

The system-level perspective was judged to be important for two main reasons. First, schools in each of the government education systems of Australia and New Zealand receive by far the largest proportion of their staff and other resources by means of direct allocation from the Education Department on either a central or a regional level.

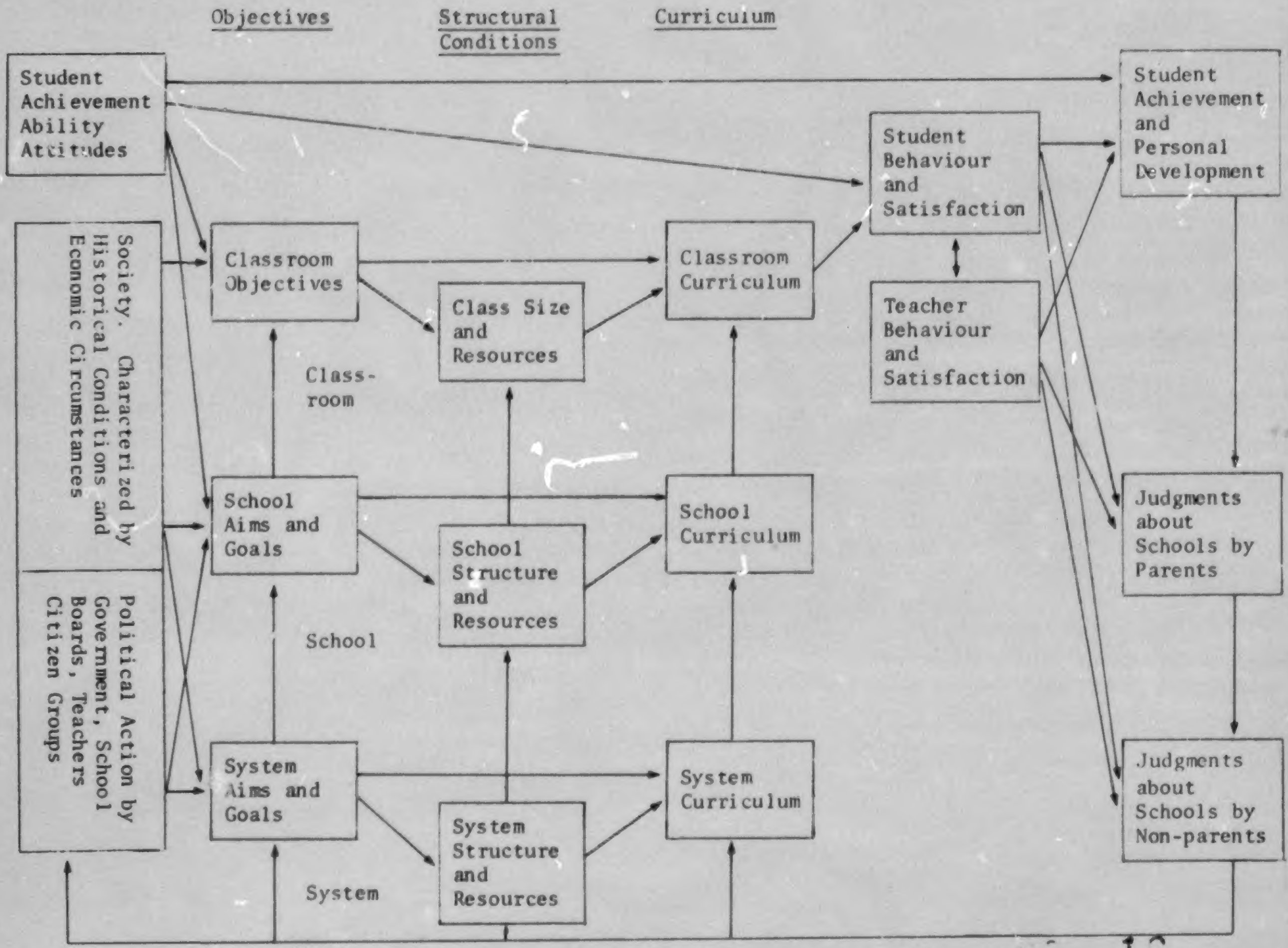

Objectives
Structural Conditions
Curriculum
Student Achievement Ability Attitudes
Society. Characterized by Historical Conditions and Economic Circumstances
Political Action by Government, School Boards, Teachers Citizen Groups
Classroom Objectives
Class Size and Resources
Classroom Curriculum
Class-room
School Aims and Goals
School Structure and Resources
School Curriculum
School
System Aims and Goals
System Structure and Resources
System Curriculum
System
Student Behaviour and Satisfaction
Teacher Behaviour and Satisfaction
Student Achievement and Personal Development
Judgments about Schools by Parents
Judgments about Schools by Non-parents

Figure 1.1 Proposed Paradigm for Investigation in the Staffing and Resources Study

The system-level resource allocation policies set the boundaries within which the schools are able to operate. As such, the internal operation of schools, which is the focus of other elements of the study, required a complementary study of system-level resource allocation policies which directly affect the schools. Secondly, it was hoped that a comparative study of the structures and processes of the eight school systems would provide a number of directions for future policy initiatives. Such initiatives might, it was hoped, arise from consideration of those policies which the systems had in common, and also from those in which they differed. Examination of common policy elements helps open debate about their conceptual foundations. Description and discussion of the policy differences between the systems may provide leads as to policy initiatives worthy of further consideration.

The linkages between the elements of the study were derived from a conceptual framework for the comparative analysis of education systems developed by Dahllof (1971). Dahllöf distinguished between the education system, the school and the classroom, and proposed linkages between each of these three levels. He argued that the linkages flowed from the system to the level of the school and from the school to the level of the classroom through:

1 the aims and goals established at the system level and translated by the school;

2 the resources available to the education system and the structure which allocated these resources to the school; and

3 the curriculum determined at the system level and adopted by the school.

The hypothesized interaction between the system, school and classroom levels in terms of aims and goals, structure and resources, and curriculum, and the interaction of these three variables at each level are shown in Figure 1.1 which represents the paradigm that was initially developed by ACER to guide the study. As can be seen from Figure 1.1 it was hypothesized that societal factors concerned with economic and political circumstances directly influenced the aims and goals established at each of the three levels, as well as the resources available to the education system, the structure of the system and the curriculum developed by the system. The paradigm also allowed for the interaction of aims and goals, structure and resources, and curriculum at the three levels to interact in turn with characteristics of students such as ability and attitudes, and to give rise to outcomes such as student achievement and attitudes. It was further hypothesized that those outcomes as they related to students and teachers would in turn affect the judgments made about the school system by parents and other community members and that these judgments would feed back into the basic elements of the model.

As can be seen from Figure 1.1, the proposed paradigm was complex, as would befit any attempt at a comprehensive study of school systems. It is not surprising that when this complexity was matched against the time and resources available to undertake the study, and the basic objectives held for the study, the result was that only a very limited treatment could be undertaken of several of the clusters of variables outlined in Figure 1.1.

The key element in this decision concerned determining the relations between school resources and student outcomes. During the course of planning the study, considerable concern was expressed about the practical, conceptual and methodological difficulties associated with the conduct of a sound and thorough examination of the relation between resources and outcomes. These concerns, some of which are elaborated further in Chapter 4 of this report and in the companion volumes (Ainley, 1982 and Sturman, 1982), were sufficient to cause the study to be limited to the 'structural conditions' variables in Figure 1.1. As such, the study is not able to consider firm guides for policy makers on the basis of clear and unambiguous relations between school resource levels and student outcomes, presuming of course that such relations do exist. The study is confined to describing existing structures and resource allocation policies at the system and school levels, and to identifying innovative structures and policies operating in particular systems and schools which could be worthy of examination.

Conceptual Framework for the System Level Study

As was indicated earlier, four clusters of issues were identified as guiding the system-level component of the study. These issues were concerned with the administrative structures of education systems, the structure and size of schools, the allocation of resources to schools, and the quality of the educational services provided in the schools.

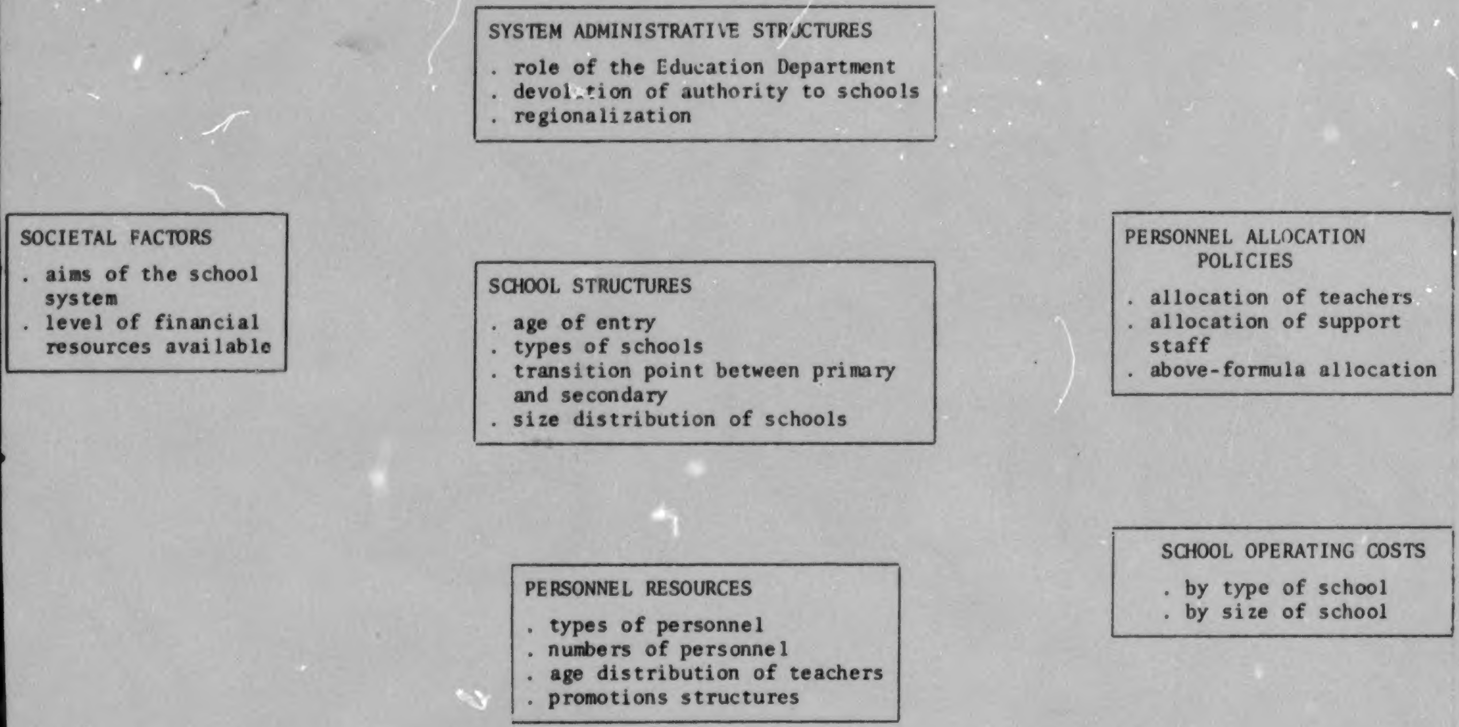
The administrative structures of the education systems were considered important for two major reasons. First, the administrative and decision-making structures which operate will influence the nature and speed of policy changes. As is argued in Chapter 2 for example, the more decentralized the decision-making structure in an education system, the more incremental are changes likely to be. Secondly, the maintenance and operation of the administrative structures involve the allocation of resources to these activities, and the nature and size of the education system will influence the proportion of total resources allocated in this manner. The discussion of the administrative structures of the government education systems of Australia and New Zealand was seen to revolve around three emerging issues, namely the role of the Education Department in co-ordinating the wide range of activities in the education sector (as broadly defined); the devolution of responsibility for curriculum and administrative matters to schools; and the decentralization of administrative and policy responsibilities to education regions. These issues are addressed in Chapter 2 of this report.

The structure of the school system and the size distribution of schools in that system have important implictions for the range of educational experiences of students as well as for the resource costs of operating the school system. Issues which were seen as important in the discussion of school systems included the age of entry to the system, the progression of students within the system, the transition point between primary and secondary schools, the development of particular school structures such as senior secondary colleges, and the size distribution of different types of schools. These aspects of the eight education systems are described in Chapter 3 and some of the cost implications of the structure and size distribution of schools are outlined in Chapter 6.

Discussion of the issues associated with the allocation of resources to schools was seen as important for two reasons. First, it is the resource allocation policies which largely determine the types of educational programs which schools are able to offer, as well as influence the costs of operating those programs. The system level resource allocation policies were seen as setting the boundaries within which school resource allocation patterns are determined. Secondly, the system level resource allocation policies are the principal means by which the objectives of an education system may be achieved. Such policies can be viewed as system level responses to particular constraints and difficulties.

It was argued during the formative stage of the study that the resource allocation policies employed at a given time would be largely dependent upon the quantities and types of resources available to the education system at that time. Accordingly any consideration of resource allocation policies needed to encompass discussion of the range of resources which the education systems had to hand. An important aspect of this process is the examination of the financial resources available to the education systems since, as argued by Beare (1978), the antecedent of the allocation of staff and other resources to schools is the conversion of the financial resources made available by government into the staff and material resources. The inclusion of the term 'staff and resources' in the terms of reference for the study indicated a wider area of concern than simply the personnel resources available to schools. However it was argued that the major emphasis should be upon personnel resources since expenditure upon personnel resources on average comprised about 75 per cent of the recurrent budgets of government education systems (Commonwealth Schools Commission, 1981).

The level of personnel and material resources available to schools include more than those resources based at the school. Of relevance also are those resources which are shared between schools, the resources available in the central and regional offices of the education departments, and those resources made available to the schools by other government departments and the community generally. However, since the greater majority of the resources of an education system are located in the schools of that system, it was resolved that the major focus of the study would be upon the policies pertaining to school-based resources.



SYSTEM ADMINISTRATIVE STRUCTURES

- . role of the Education Department
- . devolution of authority to schools
- . regionalization

SOCIETAL FACTORS

- . aims of the school system
- . level of financial resources available

SCHOOL STRUCTURES

- . age of entry
- . types of schools
- . transition point between primary and secondary
- . size distribution of schools

PERSONNEL ALLOCATION POLICIES

- . allocation of teachers
- . allocation of support staff
- . above-formula allocation

SCHOOL OPERATING COSTS

- . by type of school
- . by size of school

PERSONNEL RESOURCES

- . types of personnel
- . numbers of personnel
- . age distribution of teachers
- . promotions structures

Figure 1.2 Framework for the System-Level Component

In sum, it was resolved that the discussion of the allocation of resources to schools should involve consideration of the level of financial resources available to the education systems, the objectives of the education systems, the types of personnel employed in the systems, the policies used to allocate these resources to the schools and the implications of these policies for the costs of operating schools of different types. Each of these issues is addressed in the chapters which follow.

Discussion of the issues associated with the quality of the educational services provided in the government school systems was a more difficult area to come to grips with. Much of the initial interest in this area was generated by a common concern in the education systems that the combination of declining enrolments in some areas and the increasingly severe financial constraints facing all education systems would limit, in the short-term at least, opportunities for growth in the government education systems. If such a prognosis were fulfilled, it was felt that the age distribution and promotion structure in the government education systems would hamper the opportunities for long-run career development open to many teachers, with the possible consequence of an adverse effect upon the morale of teachers. In order to address this issue, the implications of declining enrolments for school resource levels, and the age distribution and promotion structure of the teaching service, are discussed in Chapter 4.

The overall framework for the system level component of the study is represented in Figure 1.2. The blocks of factors represented in the figure are essentially an elaboration of the system-level subset of the paradigm that was originally proposed to guide the total study and was represented in Figure 1.1. It should be noted that causal relations are not depicted in Figure 1.2 even though it could be hypothesized that, following the conventions of path analysis, the general causal relationship between the blocks in Figure 1.2 would move from left to right.

Conduct of the System Level Study

In the planning of the system level study it was envisaged that the provision of information about individual systems would be undertaken by the participating education systems because of their better access to the documentary and statistical material necessary for the task. The major responsibility of the ACER was seen to be that of co-ordinating the preparation of the reports by each system, as well as the writing of an overview volume which brought together the major features of the individual system reports. To this end, during the first half of 1979, the ACER research team in conjunction with the Technical Committee developed a set of guidelines to assist the participating education systems with the preparation of the system level reports. The guidelines represented a compromise between the type and range of data necessary for the study and the level of resources which the systems could devote to the task of preparing the reports. These guidelines are reproduced as Appendix I.

The guidelines suggested that each education system should prepare a report of approximately 20,000 words with three main sections. The first section was principally concerned with the types of personnel resources available within each system, and discussed matters relating to recruitment, appointment, promotion and general employment conditions of each of the major categories of personnel. The second section sought information on the means by which such personnel were deployed to various tasks and allocated to schools. The final section of the guidelines was more open-ended and suggested that the education systems should attempt to discuss the types of policy options which may come under consideration in the near future to address some of the problem areas that were identified earlier in this chapter. It was also suggested that the education systems should attempt to identify anticipated developments which, in their view, were likely to affect educational resource issues in the longer term. In preparing the system level reports, the systems were encouraged to refer, where possible, to the economic, political, social and educational forces which helped to shape the structures and resource allocation policies which now operated. The original intention of complementing the descriptions of present day structures and policies by the preparation of a detailed historical analysis of the evolution of resource allocation policies was not able to be realised because of resource constraints.

The system level report guidelines were not intended to be prescriptive, but rather sought to provide a framework within which a core of basic data could be assembled. The systems were encouraged to provide additional material on resource allocation issues not included in the guidelines where such issues were judged to be relevant and the supporting material was available. In addition, it was recognized that following preparation of the system level reports, the systems could be asked to supply further general material for the comparative analysis, and that individual systems could be approached concerning the supply of additional material on specific issues.

In general, the final form of the system reports were completed during the first half of 1980. Most systems had adopted the format proposed in the guidelines, and enclosed additional relevant documentary and statistical material. It is the reports prepared by each of the eight participating education systems, which form the basis of this report. The area of the guidelines with which the education systems had the most difficulty was the section concerned with future policy options. This difficulty is not surprising, because of the problem of predicting movements in turbulent times. It is perhaps also the case that where policy responses to anticipated developments had been formulated, those concerned would have had an understandable reluctance to commit those responses to the public arena. Overall however, the system-level reports and the associated documentation provided a great deal of material which proved useful in the preparation of this report. Nevertheless, over the course of the study, it became apparent that the material contained in the system-level reports was insufficient to address all of the issues of concern to the study. In some instances this necessitated a return to the systems, either as a group or individually, for additional material, while in other instances further sources of information held either at ACER or elsewhere had to be sought.

For most sections of the system level reports there was a common data reference period, namely 1979. This emphasis was intentional since the system level study was designed to complement the school survey which was conducted in late 1979. In simple terms the system level phase was intended to describe and analyse the allocation of personnel resources to schools, while the school level component of the study was designed to show how such resources were used by the schools. For this process to be meaningful it was important that both components had a common reference period. As such, much of the data presented in this report is somewhat dated as it refers to 1979. Nevertheless, in those sections of the report where the nexus between system and school level policies is of less direct importance, an attempt has been made to incorporate major developments in the systems which have occurred since 1979. Of course, most education systems are in a process of continual change, albeit at different rates at different times. The material contained in this report provides an indication of the base from which change is occurring as well as the major directions of that change.

A Broadening in the Expectations for Schools

The Staffing and Resources Study was undertaken and is reported during a period of considerable uncertainty in the government school systems of Australia and New Zealand. In part, this is related to the financial context within which government schools have to operate. The uncertainty is also traceable to the widespread debate about the purposes which primary and secondary schools should attempt to fill. Where there is a diversity of views on the functions of schooling, considerable debate is likely to occur about the appropriate direction in which schools should develop, and the appropriate policies to foster that development.

This report is not the place for an extensive review of the objectives which are held for, and by, government primary and secondary schools. It is possible, however, to make some general comments about the evolution of views about the functions of schools, and to distil some of the implications of these views for resource allocation policies. Over the period of the past 20 years there has been a broadening of the expectations which are held for schools. Three strands are evident in this. First, there are those who argue that because of rapid and significant changes in the fields of knowledge, and concomitant changes in the type of society for which young people have to be prepared, it is necessary for the schools to provide a more extensive program than was formerly the case. The second strand is evident in the writings of those who have been dubbed by Crittenden (1981:17) as '. . . progressives who hold a society-centred . . . view of education'. According to this view, the school has the primary function of promoting socially desirable aims such as a more equitable and cohesive society. The third aspect of the broadening of the expectations held for schools is one which has become more evident over the latter half of the 1970s, namely that schools should attempt to cater more for differences in the aptitudes and interests of individual students.

The argument that schools need to broaden the range of their program because of changes in the society for which students have to be prepared was strongly evident in the reports of official enquiries into education conducted in Australia and New Zealand during the 1960s. For example, the 1960 Report of the Committee on State Education in Victoria (the Ramsay Report) stated that:

> The daily increasing fund of knowledge . . . makes it necessary to continually review and revise the aims of our schools . . . so that children . . . will be able to match the increasing responsibilities placed upon them by this accelerating rate of development of the material environment . . . (Victoria, 1960:93)

This general view led the Committee to call for increased attention to be paid to the practical and theoretical aspects of technology, basic scientific principles, and civic affairs. In addition, the Committee argued that because of concern about the alleged decline of moral and ethical standards, and the declining capacity of traditional institutions such as the Church and the home to arrest such trends, it was necessary for the schools to recognize their responsibility for sharing the task of inculcating high moral and ethical standards (op. cit:94).

The consequence of calls such as these and similar arguments echoed in the reports of other official enquiries in Australia and New Zealand, was that the period of the 1960s and 1970s witnessed a marked expansion in the range of curriculum offerings of the schools. The range expanded chiefly because the calls for new subject areas to meet changing needs were not, in the main, matched by equally persuasive calls to delete subject areas which were no longer considered to be relevant or necessary. The net result was the addition of a range of new subjects to the traditional offerings of the schools. This broadening of the curriculum reflected an acceptance of the view that the range of knowledge and skills necessary to function as an effective member of society was significantly wider than was formerly the case. From a resources perspective, the broadening of the curriculum in both primary and secondary schools during the 1960s and 1970s necessitated an increase in the numbers of teachers who were specialists in particular subject areas, as well as an increase in the range of specialist teaching areas and facilities.

The second major factor in broadening the range of expectations held for schools had its origins in the United States during the early 1960s and was principally concerned with the social, political and economic consequences which could be expected to flow from an expansion of the school system. Thus, the 1971 Report of the Committee of Enquiry into Education in South Australia declared that:

> No educational system stands apart from the society which establishes it. It has purposes that must be achieved if that society is to continue. It is embedded in that society, drawing nourishment from it and in turn contributing to its opportunities for growth and renewal. (South Australia, 1971:25)

Aside from the opportunities for individual development, this and other contemporary reports also argued that education could assist in the process of establishing a more equitable society as well as facilitating economic growth and development. It is difficult to assess the influence of such views upon those who make decisions about the level of resources to be allocated to the education sector. However, it is the case that between the late sixties and the mid-seventies, the level of resources allocated to the education systems in Australia and New Zealand increased markedly in absolute terms and also as a proportion of Gross Domestic Product. At least some of this increase in resource levels could be attributed to the view that economic and social dividends were expected to accrue as a result of additional investment in the education sector.

The increase in funds for education arising from beliefs about the favourable economic and social consequences likely to flow from the application of those funds was something of a double-edged sword for the education sector. While the additional resources were welcomed, the expectations about the results likely to be generated as a result of these funds placed additional and perhaps unfair burdens upon the education system. Aside from the conceptual and methodological difficulties in attempting to isolate the specific contribution of education to economic growth, social equality or other socially desirable goals, the fact that by the end of the 1970s in some eyes such objectives had not been demonstrably achieved as the result of additional funding for education, made the task of those who were arguing for reductions in educational expenditure that much easier. Few were also prepared to argue, however, that the range of responsibilities of the school should be commensurately diminished.

The third strand fostering a broadening of the expectations for schools has been an increasing awareness over recent years of the needs of individual learners. Thus, for example, the 1979 Ministerial Statement on the 'Aims and Objectives of Education in Victoria' included amongst the list of objectives:

> . . . to provide equality of opportunity for all students by catering as far as possible for individual differences . . . to foster in each student a broad range of physical, intellectual, practical, artistic, emotional, and social skills and to extend students talented in these areas to their highest possible levels. (Victoria, 1979)

Similar expressions of the need to cater for individual differences are to be found in the reports of recent official enquiries (e.g. New Zealand 1976, Tasmania 1978, South Australia 1981) and in recent officially published statements of the aims and objectives of the government education systems of Australia and New Zealand. The awareness of the needs of individual children is of course not new. Crittenden (1981) for example, argues that many of the teaching methods of primary school teachers in the 1950s were influenced by the views of educational progressives about the benefits of individual instruction. Similarly, official reports of the 1950s and 1960s paid attention to the different needs of groups of children such as the gifted, the handicapped, and those living in country areas. However, what has gained increasing acceptance is the view that each learner is unique and that educational programs and teaching strategies may have to be designed accordingly.

This view has become particularly prominent at the secondary school level, in large part because of the great expansion in the numbers of students remaining beyond the minimum school-leaving age. In 1954, secondary schools in Australia enrolled only some 43 per cent of all 15-year-olds and about 9 per cent of 17-year-olds (Borrie, 1972). It was even the case that in a number of systems fees were charged for attendance at secondary school up until the 1960s. By 1980 however, almost 90 per cent of 15-year-olds were enrolled at a secondary school, and over 30 per cent of 17-year-olds were still at secondary school. This marked increase in the numbers of secondary students, and the increasingly diverse range of their backgrounds, aptitudes and interests, has forced this sector to re-examine the appropriateness of fairly narrow academic programs principally designed to prepare students for tertiary study.

The pressures upon the secondary school also derive from its particular position in the educational system. As is argued by Collins and Hughes (1979) the secondary school is particularly vulnerable to competing views of the purposes of education:

> Primary schools can claim the 'basics' firmly as theirs, universities can claim academic learning, TAFE institutions can claim technical training, the family can claim the task of nurturing the physical and mental health of each individual child. Yet all of these goals run as threads through the secondary school system. Secondary education, at present, is expected to do some of each of them. (Collins and Hughes, 1979:290)

In terms of resources, an acceptance of the view that individual students differ in terms of their aptitudes and interests, and that schools should attempt to cater for such differences, can be taken as an acceptance of the view that schools need a higher level of resources per student, and an increasingly diverse range of resources per student. A further corollary is concerned with the appropriate level of decision making in connection with resource deployment. If it is accepted that individual students differ in their aptitudes and interests and that these differences are significant, it follows that the types of program that need to be offered to cater for these differences may also differ significantly between schools and between individual classrooms within schools. This implies that for the design of appropriate responses to the needs of individual learners, the authority for curriculum and resource deployment matters may need to be increasingly devolved to the school. This in turn implies an acceptance of the enhancement of the role of the school in the selection of staff. As it is expressed by Crittenden (1981):

> If the move to a more decentralized pattern of public schooling is to be fully effective (particularly in the detailed planning of educational programs), it is essential that there be some local control over the appointment of teaching staff. (Crittenden, 1981:89)

Such moves of course may raise particular difficulties for those with the responsibility of overall co-ordination of the education system. As Crittenden concludes:

> . . . the development of a proper balance between the freedom of individual schools and the political responsibility of those who have authority in the system as a whole is among the most important tasks facing public education . . . (Crittenden, 1981:89)

The preceding discussion of emerging trends in the expectations held for the government schools of Australia and New Zealand and the resource implications of these expectations has been brief. However, a strong case can be argued that the schools of the 1980s are expected to perform a broader range of functions than the schools of 20 years ago. These expanded views of the roles of schools have been expressed in the reports of official committees of enquiry and in the published aims and objectives of the education systems and of individual schools. The expanded expectations for schools have been generated by a variety of overlapping concerns including the increased responsibility of the schools for the welfare of specific groups, the need of the school to respond to the needs of individual learners, the role of the school in fostering socially desirable objectives, and the tasks of preparing students for effective participation in an increasingly diverse and uncertain world. The broadening of the expectations held for schools has strong implications for the types of tasks performed by the school, the ways in which those tasks are performed, and the ways in which educational decisions are reached. Some of the more important of these implications will be addressed in the following chapters in the context of the allocation of resources to schools.

CHAPTER 2

THE CHANGING STRUCTURES OF THE EDUCATION SYSTEMS

Introduction

It is about 100 years since each of the six colonial governments in Australia established Departments of Education to be responsible for the conduct of educational programs, and appointed Directors or their equivalents to administer those Departments. The legislation which was passed between 1872 and the close of the century determined a pattern of education that remained unchanged, in the main, until the past decade. The systems of public education that were established were 'free, compulsory and secular' and sought to serve equally the scattered populations of the colonies. When in 1900, the six colonies federated to form the Commonwealth of Australia, education remained within the control of the States, and as a consequence there are today six independent systems of public education each responsible to a State Minister of the Crown. For convenience the different Australian Territories were linked to an appropriate state system until 1974, when in the two major Territories, the Australian Capital Territory and the Northern Territory, the links were severed with the New South Wales and the South Australian systems respectively to set up new organizations for the conduct of education under the jurisdiction of the Commonwealth Government. Further changes will occur as the Northern Territory completes the establishment of a full State Government structure.

In part because of the high concentration of the population of each of the States within a capital city, and the scattered nature of the remainder of the population across vast areas, the six state systems of education that were established have been, until recently, highly centralized and tightly integrated. The extent to which centralization in organization of education has occurred has not escaped the notice, nor commonly the highly critical comment, of overseas scholars who have studied Australian education (Kandel, 1938; Butts, 1955; Jackson, 1962). Even today this issue is one of the most frequently discussed and controversial aspects of the six state systems (see for example, Pusey, 1976). However, there have been substantial changes in the organization of the state systems during the past decade; some of these are discussed in the next section.

In contrast to the pattern of organization of education in Australia is the system established in New Zealand. European settlement in New Zealand started in 1840, at about the same time as in several Australian States, and while the origins of the educational systems set up in each country can be found in nineteenth century England and Scotland, the particular administrative structure developed in New Zealand was a reflection of the autonomous provinces which existed in the country until 1876. When in

1876 the provinces were abolished and a single central government was formed in Wellington, the pattern of administration of education associated with the original provinces was largely maintained. As a consequence, the organizational system that has evolved in New Zealand has at the primary school level been built around 10 Education Boards. While the Boards are financed from the Department of Education in Wellington, they have the responsibility for employing teachers, as well as building, maintaining and equipping the schools according to the funds available and within centrally determined guidelines. Each primary school has its own school committee which has responsibility for the day-to-day management of the school buildings and equipment, and some limited influence on the educational functions of the school. Responsibility for the inspection of teachers, supervision of school curricula and in-service training of teachers rests with the central Department of Education (see Boag, 1980). The secondary schools are under the direct administration of the Education Department. However, at the secondary school level devolution of responsibility has been taken a stage further than in the primary school. Each secondary school is under the control of its own Board of Governors, which has responsibility for the appointment of the staff of the school including the principal. Financial support for the school and some degree of supervision of the school curriculum, rests as at the primary school level, with the Department of Education. These organizational and administrative arrangements, while providing a devolution of responsibility to both the regional and school levels have some problems. Boag has commented recently:

> although these Boards are responsible for spending quite large amounts of public money, they are not in a position to be held directly accountable for that expenditure in a way in which a Government Minister can be. This . . . situation has generated more than its share of tensions over the country - tensions between boards and their school committees to whom they are theoretically accountable and between Boards and the Government administration. The latter was undoubtedly a significant contributing factor in the various attempts . . . to abolish the Boards or to curtail their powers. (Boag, 1980:164)

In addition, Boag draws attention to the fact that at the primary school level while the school principals and the school committees have some avenue for the provision of advice about the conduct of schools they have little direct say in the appointment of staff.

Changes of the Past Decade in Administrative Structures

The administrative structure of education in Australia has undergone change in the past decade and is still in a state of flux. Perhaps the single most significant event was the brief period from 1972 to 1975 when the Labor Party was in government at the federal level and approved the establishment of the Interim Committee for the Australian Schools Commission. The Schools Commission has exerted an influence on not only the funding of education but also the debate and discussion associated with certain critical issues in the administration of education. It would be misleading to imply that the Schools Commission was the sole inventor and generator of the changes that occurred during these years. Many moves were already in train. However, the Commission served to focus the debate, to provide the financial support that enabled change to occur, and to create a climate in which change was expected and accepted. The Schools Commission provided for the Commonwealth Government a means by which it could inject funds into Australian schools. In addition, the Interim Committee laid down among the values that guided the policies the Commission recommended, a devolution of responsibility and rather less centralized control over the operation of schools, a development of diversity in the organizational form of schools, and a greater degree of direct community participation in the governance of schooling (Schools Commission, 1973).

The Commonwealth Government took other major initiatives in the education sector during the years 1972-1975. These were, first, an increase in Commonwealth financial support for child care facilities and pre-school education following the preparation of a report on the Care and Education of Young Children (Australian Pre-Schools Committee, 1974). Secondly, the Commonwealth Government extended financial support for autonomous Colleges of Advanced Education responsible for teacher education programs. This followed an initial move, suggested by the Martin Committee (Australia, 1964) that the Commonwealth should become involved in teacher education, which led to the making of grants to assist in the building and equipping of additional teachers colleges. Thirdly, arising from the report of the Kangan Committee (Australia, 1974) the Commonwealth Government provided increased support for technical and further education programs. These initiatives have substantially influenced the provision of education at the State level in Australia in ways that diversified the control of education.

Three major organizational changes in the state education systems have also occurred during the period 1970 to 1980. First, there has been a change in the role of the Education Department as a consequence of the establishment of autonomous teachers colleges and the development of the colleges of technical and further education. Secondly, there has been a delegation of responsibility for the administration of matters associated with the running of schools to regional offices. Thirdly, there has been an increased devolution of responsibility to schools, their principals and their staffs, and in some places to school councils and committees, for the curricula of the schools and for some administrative matters. These changes have been influenced by the policies and programs of the Commonwealth government, as well as by initiatives within the States. Each of the changes will now be considered.

The Changing Role of the Education Department

Until 15 or 20 years ago, in each State the senior officers of the Education Department had responsibility for almost all aspects of education supported by public funds in the State and advised the Minister of Education in the State on all matters pertaining to education. This situation has now changed. In all States responsibility for teacher education has been passed to autonomous colleges of advanced education which are supported from Commonwealth sources. In addition, in all States, except Tasmania, where once there was only one university, there are now at least two and up to six autonomous universities.

As a consequence of the expansion of tertiary education, most States have established a post-secondary education commission or its equivalent to co-ordinate and, in part, to control the activities of these institutions. Thus a new board or commission has been set up to undertake duties that were formerly carried out by a central Education Department.

Where once technical education formed a division within the Department of Education, now in two States - New South Wales and South Australia - responsibility for technical and further education has been moved to a new department of state. In two other States similar changes are pending, having become necessary as a result of the marked expansion that has occured in this area partly as the result of increased financial support from the Commonwealth Government for technical and further education.

There has also been in many of the States a significant increase in the number of statutory authorities in the field of education with responsibility for such matters as: the registration of teachers, the registration of schools, the conduct of the matriculation examination, and the in-service education and training of educational administrators. There has also been a marked expansion in the number of committees which provide advice on administrative and policy issues to the Minister of Education.

The administration of education is accordingly now more diverse and complex as there is a need to respond to recommendations coming from more than one department, several statutory authorities and a number of committees of advice. The recommendations that come from these differing bodies may be contradictory and the differences may be difficult to resolve particularly where the decisions required cut across two or more sectors and where the sectional interests conflict. Each of the States have attempted to find methods of resolving these issues, and policies which have either been adopted or are currently under consideration in several of the States are described below.

In New South Wales, it was initially proposed that a Ministry of Education should be established with a Secretary appointed to supervise the office of the Minister and to recommend courses of action to the Minister. This approach was not adopted and an alternative solution which involves a Commission on Education has recently been instituted to provide advice to the Minister. Interested parties are represented on the Commission and must argue their case before the Commission. In Victoria, two Ministers of Education were appointed several years ago to cover different sectors within the portfolio. Following the election of a new government in April 1982, Victoria has reverted to a single Ministerial position for the education portfolio. A State Board of Education is to be established with a charter to provide independent advice on a broad range of educational issues including the staffing of government schools and the distribution of State government funds to the non-government sector. The State Board is to be complemented by regional councils which are to be established to assist co-ordinate educational activities at a regional level. In Queensland, the Parliamentary Committee of Enquiry (Queensland, 1980) recommended a solution based on the practices that have been adopted in Alberta, Canada, of appointing two separate Ministers, one to be concerned with primary and secondary education, and the other with post-secondary and tertiary education. This proposal has not as yet been adopted. In South Australia, a Committee of Enquiry (South Australia, 1981) recommended that a small Office of the Ministry should be established, and that inter-sectoral issues requiring resolution should be taken by the Minister of Education to an Education Policy and Priorities Executive, comprising the chief administrative officers of the different educational sectors, who would jointly consider the resolution of the issues. Proposals for reform of the educational policy-making process such as those just outlined reflect a concern in the education systems that new structures need to be established to co-ordinate policy determination. In part, this concern has been generated by the difficulties of managing education systems which are no longer expanding at the rapid rate experienced until the mid to late 1970s.

The Devolution of Authority to Schools

The Australian government education systems differ significantly in the extent to which they have devolved authority to schools over the past decade. In the state systems, perhaps the most extensive moves have been made in Victoria (Reed, 1968) and South Australia (Jones, 1974; Jones, 1977). The moves in both systems were in the direction of delegation of responsibility to the principal of a school for a significant number of professional and administrative duties. The areas in which Victorian and South Australian schools were given freedom and authority were different from those already held by New Zealand secondary schools, which, as noted, have traditionally been permitted to select and appoint their own principal and staff. Although they represented substantial change in Australian terms, the policy statements that were issued to guide the devolution process generally did not examine fully questions of responsibility of the school principal to the school council, by the school council to the Education

Department, and by the Education Department system to Parliament. Such questions are still largely unresolved. However, the policy statements that have been promulgated have led to a great deal of innovatory practice and to the introduction of imaginative changes.

In the Australian Capital Territory from the outset of the establishment of the ACT Schools Authority there has been a high degree of devolution of responsibility to schools for administrative and curricular matters. These changes have been endorsed by the report from the recently completed review of primary education in the ACT Government schools in the following terms.

> There is substantial support for the retention of the principles underlying the ACT education system; many participants see school-based decision making, the local formulation of philosophy and policy, partnership in governance and community participation as its most desirable characteristics. (Australian Capital Territory, 1981:16)

The report went on to say:

> Primary schools within the system are performing well. Parents and teachers agree closely on the relative importance of a comprehensive range of educational goals and on the relative levels of achievement of these goals. These levels are seen by both groups to be satisfactory. Parents appreciate the professional attitudes of staff in primary schools. The children surveyed expressed positive attitudes towards school and see themselves as working hard and being challenged. (Australian Capital Territory, 1981:16)

The Committee of Review from the evidence available to it on the effects of the policies of devolution of greater responsibility to schools, found that students, teachers and parents endorsed the pattern of operation that was evolving. In a similar way the Committee that examined the working of the ACT Schools Accrediting Agency (Australian Capital Territory, 1979) endorsed the methods of operation and the greater devolution of responsibility for curriculum and assessment matters that had been given to the secondary colleges in the ACT.

There are two quite distinct domains involved in the devolution of responsibility to schools, namely: for curriculum matters and for administrative matters including the selection and appointment of teachers. While these two domains are necessarily inter-related, it would appear, at least in view of New Zealand policies, that they should be considered separately.

Curriculum matters. Responsibility for curriculum development within the six Australian state education departments has been considered in some detail by Deschamp and McGaw (1979). They argue that over the past decade the state education departments have endeavoured to encourage schools to take greater initiative on curriculum matters and to reduce the extent of central control. There has been a movement towards what has become known as 'school-based curriculum development',

* Indicates that activity is undertaken in this area at this level			System															
Form of Curriculum Development	Location	Areas of Curriculum Development	ACT		NSW		Vic.		Qld		SA		WA		Tas.		NZ	
			P	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S
Central Aims with Curriculum Guides	Centre	General aims			*	*			*	*			*	*			*	*
		Curriculum objectives			*	*			*	*			*	*			*	*
		Organization and content			*	*			*	*			*	*			*	*
		Teaching methods																
	School	General aims																
		Curriculum objectives			*	*			*	*							*	*
		Organization and content			*	*			*	*			*	*			*	*
		Teaching methods			*	*			*	*			*	*			*	*
Central Aims with School Based Curriculum Development	Centre	General aims									*	*			*	*		
		Curriculum objectives									*	*			*	*		
		Organization and content																
		Teaching methods																
	School	General aims																
		Curriculum objectives									*	*			*	*		
		Organization and content									*	*			*	*		
		Teaching methods									*	*			*	*		
School Aims and Curriculum Development	Centre	General aims	*	*			*	*										
		Curriculum objectives	*	*			*	*										
		Organization and content																
		Teaching methods																
	School	General aims	*	*			*	*										
		Curriculum objectives	*	*			*	*										
		Organization and content	*	*			*	*										
		Teaching methods	*	*			*	*										

Note: P = primary schools, and S = the compulsory years of secondary education.

Source: Compiled from Deschamp and McGaw (1979), Connors (1978), Schools Commission (1978); New Zealand, Department of Education (1979).

Figure 2.1 Aspects of the Devolution of Responsibility for Curriculum Development in the Government Education Systems of Australia and New Zealand

but the six States have not all moved to the same extent or in the same ways on these changes. Deschamp and McGaw identified three general strategies that currently apply to curriculum development in Australia: (1) centrally prescribed aims and curriculum guides, (2) centrally prescribed aims, but with school-based curriculum development, and (3) school aims and school-based curriculum development. Responsibilities in the field of curriculum development can be sub-divided into four general areas concerned with the specification of (1) general aims, (2) curriculum objectives, (3) organization and content, and (4) teaching methods. Thus it is possible to portray the current practices in each state educational system in terms of a profile indicating which of the three strategies is most generally employed and in which of the four areas is responsibility taken by the central administration, by the school, or jointly by the school and the central administration. The profiles for the seven Australian government education systems, based in part on the analysis provided by Deschamp and McGaw and in part on the descriptions provided in the Background Papers prepared for the National Conference on School Based Decision Making conducted by the Schools Commission in 1977 (Connors, 1978; Australia. Schools Commisssion, 1978) are presented in Figure 2.1. The profile for New Zealand was derived from an official publication of the New Zealand Department of Education (1979). The figure permits the possibility of a distinction between the profiles for primary schools and the compulsory years of secondary education. However, while some differences exist between levels, they are not of sufficient magnitude to warrant the portrayal of a different profile for any system at the primary and secondary levels. The profile for secondary education has been confined to the compulsory years of secondary schooling because beyond that point in most systems external bodies influence the curricula.

As shown by Figure 2.1 in four of the systems, (New South Wales, Queensland, Western Australia, and New Zealand) the Departments of Education have formulated system level aims and curriculum guidelines for all primary schools and for the compulsory years of secondary education. More detailed curriculum objectives have also been stated in the syllabuses prepared by central syllabus committees. Nevertheless, within a school in these four systems, the school principal and staff have some freedom to restate and determine the curriculum objectives for use within the school as well as to identify the content and its organization that should be taught and the teaching methods that should be used.

In two of the systems, South Australia and Tasmania, general statements of curriculum aims are developed centrally, together with broadly defined statements of curriculum objectives. The schools are expected to adhere to the aims laid down in developing their programs of instruction, but are permitted considerable freedom to modify the curriculum objectives, to re-organize the content and to develop appropriate teaching methods to meet their particular circumstances. Thus there is considerable freedom available to the schools to undertake their own school-based curriculum development.

In Victoria and the Australian Capital Territory, while general aims and curriculum objectives have been stated by the central Curriculum Branches, the schools have the freedom to restate the aims of schooling in their own terms and to redefine the curriculum objectives to satisfy their own conditions and circumstances and to fulfil the aims of the school. Thus the prevailing strategy is one of development of both the aims and the curriculum at the school level, and the school selects, organizes content and uses teaching methods that are in accord with the chosen aims and objectives.

As with other aspects of the devolution of authority to schools, the position depicted in Figure 2.1 in regard to curriculum responsibilities is not a fixed one. Two developments in particular should be noted. First, even in those systems in which schools have for some time exercised considerable autonomy in curriculum development and implementation, there is increasing interest in the possibility of identifying a commonly agreed set of curriculum objectives and areas. Secondly, and related to the previous point, in several systems there are indications that there is likely to be an increased involvement at regional level in curriculum development, either through the relocation of some centrally-based curriculum staff in the regional offices, or the development of regional advisory bodies, or some combination of both. To the extent that each of these developments eventuate, they will have considerable implications for the division of curriculum development resources between the central, regional and school levels.

Administrative matters. Of considerable relevance to the process of devolution is the existence of a school council that has some administrative responsibility. In New South Wales and Tasmania, school councils do not exist although in New South Wales attempts were made to establish them several years ago. In Queensland and Western Australia groups representing community interests have been established in some schools to provide advice to the principal; such groups do not however possess any formally recognized status. In the remaining four systems school councils have been formally established and have differing degrees of responsibility for administrative matters delegated to them. Of these, it is in the ACT that the local school council or board has the most extensive range of power. As such, the structure and composition of the school boards in the ACT deserve some elaboration. The boards comprise parents, teachers elected by the staff, the principal (as executive officer), a nominee of the ACT Schools Authority, and (in secondary schools) students. Consequently the membership of the school boards is similar to those of the ACT Schools Authority itself (Beare, 1978). As specified by legislation, the major responsibility of each school board is to determine the educational policies to be implemented at the school. This charter involves school boards in approval of the educational program of the school, in staffing through the approval of duty statements, and in a range of other administrative tasks. Such responsibilities demand a considerable degree of commitment on behalf of board members and underline the importance of adequate support services for the effective operation of the boards. A further implication of the structure and role of the school boards in the ACT is that through extensive local involvement in curriculum development and staff selection, considerable diversity between schools in their educational programs has evolved.

Figure 2.2 provides information on the devolution of major areas of administrative authority to schools in the eight education systems. In general, the appointment of professional staff at all levels is undertaken at the central departmental or the regional level. In the ACT the appointments are made by the central administration, but in consultation with the local school board which develops a duty statement for each new position. In Tasmania, the schools decide on the appointment of some part-time teaching staff who are employed under certain conditions. Only in secondary schools in New Zealand has the practice become established for the appointment of the teaching staff of a school, at all levels from the principal down, to be made by the Board of Governors of the school. However, in Victorian technical schools the school councils have traditionally had an important role in the appointment of the school principal, and more recently the vice-principal.

With respect to the appointment of school support staff such as teacher aides and clerical assistants, the schools in most systems have a greater degree of responsibility than was evident for the appointment of teachers. This responsibility has two main features. First, in most systems the school is able to be involved in the placement of local advertisements for vacant support staff positions, the interview of applicants, and the recommendation of a preferred applicant to either regional or central authorities. The major exception is New South Wales where it is only in the smaller population centres that a school princpal, through his chairmanship of a local committee, is able to recommend to the regional office on the preferred applicant for a support staff position. In the larger centres, the responsibility rests with the regional office; some principals may play a role at this level through membership of a regional selection committee. Despite the widespread involvement of schools in most systems in the appointment of support staff however, the actual employer of such staff is generally not the school, but the central education authority or some other government department. The principal exception to this lies in the technical schools of Victoria where the school councils are responsible for the employment of support staff. The second feature of school involvement in the appointment of support staff concerns the role of the school in several systems in determining the configuration of such staff within overall entitlements. As is detailed in Chapter 5, schools in the ACT, South Australia, New Zealand and the secondary school sector of New South Wales have considerable autonomy

Administrative Activity	Australian Capital Territory	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	New Zealand	
								Primary	Secondary
Appointment of Staff									
Principal	2	1	2[b]	1	1	1	1	1	3
Senior Positions	2	1	1	1	1	1	1	1	3
Assistant Teachers	2	1	1	1	1	1	1	1	3
Teacher Aides	2	2	3	2	3	2	2	3	3
Clerks and Typists	2	2	3	2	3	2	2	3	3
Caretakers and Groundsmen	2	2	3	2	3	2	2	3	3
Buildings and Equipment									
Building Construction	2	2	2	1	2	1	2	2	2
Building Maintenance	3	2	2	2	2	2	2	2	3
Purchase of Equipment	3	3[a]	3	3[a]	3	3[a]	3[a]	3	3
Purchase of Teaching Materials	3	3[a]	3	3[a]	3	3[a]	3	3	3

Key:
1 no direct school involvement
2 school may make recommendations to regional or central authorities
3 responsibility rests with the school subject to centrally determined financial and administrative considerations

Source: compiled from Schools Commission (1978) School-Based Decision-Making: Report of a National Conference, Part II, and System Level Reports.

Notes:
[a] selection from stock held in Government Stores Department
[b] technical schools only

Figure 2.2 The Devolution of Administrative Responsibilities to Government Schools in Australia and New Zealand, 1979

in the specification of the types of support staff appointed.

Only in Victoria has a school council the right to be authorized by the Minister of Education to appoint architects for the construction of new buildings; under these circumstances school councils may have a direct influence on the design of school buildings. In the ACT, New South Wales, South Australia, Tasmania and New Zealand the authorities within a school have a clearly specified opportunity to recommend on the design of buildings for schools. In Tasmania the maintenance of buildings is handled by the principal of a school through the Regional Office. In the ACT, New South Wales, Victoria and the secondary schools of Western Australia the school has responsibility for minor maintenance only.

Policies on the purchase of teaching equipment, teaching materials and books are in some ways made more complicated by the rights of schools in some States to charge supplementary contributions to school funds or non-compulsory fees, which provide a significant source of money for purchasing books and equipment. In addition, some schools have become entitled to receive supplementary grants from the Schools Commission and from other governmental sources which can be used in these ways. In the ACT, Victoria, South Australia and Tasmania the schools would appear to have relatively greater freedom to purchase the books and equipment that they require. It is perhaps not coincidential that, as noted earlier, it is in these four systems that the devolution of curriculum development responsibility to schools has been most extensive. In the remaining systems, books and teaching equipment must, in general, be selected from stock held in the Government Stores Department. It should be noted, however, that while in several systems schools are granted considerable autonomy in the purchase of books and other teaching materials, policies in regard to the operation of the Government Stores Department provide a strong incentive for schools to purchase from this source. In general, the Stores Departments in each system are able to offer items at extremely attractive prices. Furthermore there are policies, such as in Victoria, whereby schools are annually provided with a credit allocation at the Stores Department which enables them to buy some of their requirements without incurring any direct cost to the school. Therefore, while in such systems there is freedom to purchase from external sources, there is considerable incentive to purchase from the Stores Department.

In the maintenance of equipment there would appear to be two general approaches. In the ACT, Victoria, Queensland and New Zealand and under some circumstances in South Australia, the schools receive funding which may be used for the maintenance of equipment. However, in New South Wales, Western Australia and Tasmania, equipment is repaired and maintained, in general, through centrally controlled services. In Tasmania the Tasmanian Media Centre undertakes the maintenance of audio-visual equipment, but also uses private firms where necessary, particularly in remote areas.

A significant aspect of devolution of responsibility to schools, in the long term, will be the freedom provided to schools to attract students from districts other than that immediately adjacent to the school. The lack of zoning restrictions in New Zealand, the ACT and South Australia, gives each school the freedom to publicize its activities, to develop a distinctive school program and to draw students from other districts because of the nature of the education it provides. The question of zoning is elaborated later in the report.

Regionalization of Administration

Development

The administration of education in each of the Australian States has, until recently, been highly centralized, while in New Zealand, as has already been noted, the education boards have for a long period had substantial authority in the administration of primary schools. The highly centralized control of Australian education has been noted by overseas scholars, and over the past 20 years Australian educators have from time to time advocated policies of decentralization (Turner, 1960; Ebert, 1964; Partridge, 1968). Gradually, attempts have been made to undertake a limited amount of devolution of administrative responsibility from the central office to regional offices. However, little attempt has been made in Australia to involve local communities in education decision making at a regional level. This is in contrast to New Zealand where the members of education boards must face periodic election by members of the school committees that comprise the education board district.

In each State some degree of decentralization of educational administration now operates. The pattern of establishment of regional offices can be characterized by events in South Australia. In 1966, a proposal was prepared for the setting up of education regions in that State. While, in part, policies of decentralization were seen to provide greater opportunities for local initiative in educational matters, they were also considered to be an administrative expedient. As a consequence the first two regional offices were set up in the provincial cities of Mount Gambier and Whyalla on a trial basis. In 1971, some reservations were expressed regarding the limited nature of this decentralization by the Committee of Enquiry into Education in South Australia:

> We see little advantage in regional offices which act merely as an extra link in the administrative chain. We envisage the main functions of the regional offices as providing educational leadership and advice, promoting a unified approach to education at primary and secondary levels and advising the central administration on the allocation of resources to the region and on necessary future developments there. (South Australia, 1971:472)

While the Committee did not recommend reorganization into regions it did suggest that some ideas for regionalization should be tried on a pilot basis. Gradually over the

Table 2.1 Number and Size of Education Regions in the Government School Systems of Australia and New Zealand 1979[a]

System	Number of regions	Average number of students	Average number of teachers	Average number of schools
Australian Capital Territory				
Only one region	1	39000	2500	90
New South Wales				
Metropolitan	5	96000	4900	130[b]
Non-metropolitan	6	55000	3000	260
All regions	11	74000	3900	200
Victoria				
Metropolitan	5	85000	5600[c]	180
Non-metropolitan	6	33000	2200	200
All regions	11	56000	3700	190
Queensland				
Metropolitan	3	69000	3600[c]	160
Non-metropolitan	6	27000	1400	130
All regions	9	41000	2100	140
South Australia				
Metropolitan	4	43000	2500	120
Non-metropolitan	6	10000	600	50
All regions	10	23000	1400	80
Western Australia				
Metropolitan	4	38000	1900	80[b]
Non-metropolitan	8	10000	500	50
All regions	12	19000	1000	60
Tasmania				
All regions	3	26000	1500	80
New Zealand				
Primary	10	47000	1900	220
Secondary	3	73000	4100	110

Sources: Education Department publications; ACER Sampling Frame; Australian Bureau of Statistics.

[a] New South Wales and Western Australia data apply to August 1978; in 1979 Western Australia created an additional non-metropolitan region.

[b] Derived from the ACER Sampling Frame.

[c] Estimated on the basis of the distribution of students between regions.

period of the 1970s, 10 regional offices have been established in South Australia and a number of administative responsibilities are now exercised by them.

Each State has during the past two decades undertaken a similar program of devolution of responsibility for some administrative matters to regional offices. The history of these changes has been similar to that in South Australia, with movement being taken step by step in spite of some reservations within some systems. By the end of the 1970s in each State and in New Zealand, an extensive regional office structure had been developed. In Table 2.1 information has been recorded on the number of regions established by the systems, with a distinction made between the metropolitan and

Administrative Duties	NSW	Vic.	Qld	SA	WA	Tas.	New Zealand	
							Primary	Secondary
Schools								
Undertake the appraisal of schools	*						*	*
Assist with the evaluation of school programs	*			*			*	
Undertake the establishment of school councils		*					*	
Teachers								
Interview recruited teachers and recommend placement				*			*	
Assist with the appointment of teachers to schools	*	*	*	*		*	*	*
Arrange intra-regional transfers	*	*	*	*		*	*	*
Arrange inter-regional transfers			*				*	
Undertake assessment of teachers	*			*		*	*	
Approve emergency teachers		*	*	*			*	*
Approve leave for teachers	*		*	*			*	*
Initiate or undertake inservice education		*		*	*			
Arrange teacher housing	*	*		*			*	*
Advisory Staff								
Supervise and co-ordinate advisory staff	*	*	*	*	*	*	*	*
Property								
Recommend on the siting of new schools	*		*	*			*	*
Recommend on the acquisition of property				*			*	*
Buildings								
Determine regional priorities for major works	*	*	*	*		*	*	*
Determine and administer minor works program	*	*	*	*	*	*	*	*
Recommend on maintenance program			*	*		*	*	*
Determine needs for equipment and materials		*		*			*	*
Co-ordinate and allocate grants for special programs		*		*			*	*
Students								
Approve student travel and transport	*	*	*	*			*	*
Endorse suspension of students	*			*			*	

* Indicates that the region has administrative responsibilities in the areas indicated

Source: System Reports and Education Department Publications

Figure 2.3 Administrative Responsibilities Devolved to Education Regions in Australia and New Zealand as at August 1979

non-metropolitan regions, since the modes of operation of metropolitan regions may well differ from those of the non-metropolitan regions. Table 2.1 also shows the average number of students, the average number of teachers and the average number of schools in each region. Even though a regional structure does not operate in the ACT, the size of this system has also been recorded to provide a basis for comparison.

With the exception of the relatively small Tasmanian school system, Table 2.1 shows that there is a remarkable degree of uniformity in the number of education regions established in each of the Australian States. The five mainland States had by 1979 each established about 10 regions with between one-half and two-thirds of these being in non-metropolitan areas. The similar number of education regions in these States exists despite the quite marked variation in the average size of the regions between the larger and smaller systems. For example, there is a tenfold difference between the average size of a non-metropolitan region in Western Australia and South Australia with some ten thousand students and the metropolitan regions of New South Wales with just under one hundred thousand students. The average numbers of teachers associated with these regions correspond approximately to the numbers of students within the region and there is a similar disparity in size between these regions in the numbers of teachers. However, because non-metropolitan schools tend to be smaller than the metropolitan schools the same tenfold difference does not occur in the number of schools served by the two different types of region. It would appear that the critical factor influencing the number of regions established within a system is not the actual size of the unit being set up, but rather the number of such units that have to be co-ordinated and linked to the central administration. Thus it seems that in Australian systems, about 10 regional offices is considered to be an optimum, in order to maintain effective links between the central administration and each regional office.

Responsibilities of the Regions

Despite the similarity in the structure of the education regions in each system and the fact that the regional offices were developed over a similar period of time, there is marked variation between the systems in the range of administrative responsibilities which are exercised by the regions. These data are recorded in profile form in Figure 2.3 which indicates the range of administrative duties exercised by the regional offices in the six Australian States and in New Zealand as at mid-1979. In the case of the Australian systems and in the administration of the secondary schools in New Zealand the administrative responsibilities indicated in Figure 2.3 have been devolved from the central administration to the education regions, while in the case of the New Zealand primary school system, the administrative responsibilities have long been exercised by the education boards.

Aside from the education boards of New Zealand, Figure 2.3 indicates that the South Australian education regions exercise more responsibilities and administrative duties than the regions in the other systems. The New South Wales, Victorian and Queensland systems appear to be broadly similar in the range of responsibilities that have been devolved to a regional level. At the time of writing there has been a relatively low level of devolution of administrative duties to regions in Western Australia. However, it has been proposed that in the future, the regional offices in Western Australia will become increasingly involved in additional tasks such as intra-regional transfers of teachers, maintenance, major works of construction, site selection, school transport, teacher housing and the development of teacher resource centres.

There are only two duties that are common to all systems. These are the supervision and co-ordination of activities of advisory staff, and the determination and administration of minor works programs. There are some duties that a majority of the systems delegate to the regional offices, such as assisting with the appointment of teachers to schools and arranging intra-regional transfers. Some duties are only undertaken within one system. For example, amongst the Australian States, New South Wales is the only system in which the regional office staff have a direct involvement in the evaluation of schools. However, in several systems the regional office provides assistance with the evaluation of school programs.

Factors influencing the extent of devolution of administrative responsibilities include the geographical spread of the schools in an education system, the size of the system as measured by the numbers of schools, students and teachers, and the range of responsibilities devolved to schools. In terms of the size of the system one could hypothesize that the greater the number of students, teachers and schools, the more intense would be the pressures to decentralize administrative structures for the sake of administrative efficiency. Figure 2.3 lends some support to this hypothesis as the range of responsibilities exercised by the education regions in the two largest systems, New South Wales and Victoria, appears to be greater than in the case of the two smallest state education systems, namely Western Australia and Tasmania. The relationship between system size and the extent of regionalization is not however a perfectly direct one since it is South Australia, a medium-sized system, which appears to have devolved the greatest degree of administrative responsibilities to the education regions. This consideration leads to the third factor enunciated above, namely that the degree of devolution of authority to schools will be linked to the extent of devolution to regional offices. In part this link would be forged from a common philosophy: the values which would support a devolution of authority to schools would most likely also support a decentralization of administrative responsibilities to education regions. There is also a more practical reason as to why the greater the level of devolution of authority to

Table 2.2 Distribution of Staff in Central and Regional Offices in South Australia as at June 1979

Category of administrative staff	Location Central	 Regional	Total
Executive Staff	50	52	102
Professional Staff			
School Support, Advisors	24	89	113
Administrative	113	20	133
Teachers on Secondment	289	140	429
Ancillary Clerical and Administrative	431	71	502
Total	907	372	1279

Source: Education Department Records.

schools the greater is also likely to be the degree of decentralization of administrative responsibilities to education regions. Schools which have been granted a measure of administrative and curriculum autonomy are likely to need administrative and other support services in order to exercise effectively their additional responsibilities. In such circumstances the resources located in regional education offices, being located relatively close to the schools, are likely to be in demand by the schools.

Regionalization and Resource Usage

One important indicator of the range of duties undertaken by regional offices and the extent of devolution to the education regions would be the distribution of personnel between regional and central offices. Unfortunately, this distribution was only available for South Australia and the data are shown in Table 2.2. As was shown in Figure 2.3, South Australia could be characterized as the Australian system in which the devolution of administrative responsibilities to education regions had proceeded furthest. Table 2.2 indicates that as at June 1979 some 30 per cent of the non-school based personnel employed in the South Australian government education system were based in regional offices. One measure of the extent of the devolution of administrative responsibilities to regional education offices in South Australia is that in 1979 just over half of those non-school personnel who can be defined as executive staff (that is, receiving a salary greater than that of the highest paid principal) were located in regional offices. In addition, in support of the discussion concerning the relation between the decentralization of responsibilities to education regions and schools, almost 80 per cent of advisory staff were located in regional offices. In those systems where the devolution of responsibilities to regions and schools is less extensive than in South Australia, it could be expected that the proportion of staff located in the regions would be smaller than those shown in Table 2.2.

Decentralization and Resource Deployment

A common change in the structure of the government school systems of Australia and New Zealand over the past 20 years has been the increased devolution of responsibility towards schools and education regions. Although the pace of this change has varied between systems, in each system decision making on most educational issues is now more decentralized than in the past. Such a development has implications not only for the efficacy of decision making, but also for the deployment of resources involved in the decision-making process. In the previous section for example, it was suggested that there is likely to be a positive relation between the extent of devolution of responsibilities to education regions and the proportion of out-of-school staff located in the regional offices. It is also likely that there will be some relation between the degree of devolution of responsibility to schools and the distribution of personnel between school and non-school locations. These considerations raise the general issue of the relation between the structure of an education system in terms of its degree of decentralization, and the deployment of resources within the system.

Holdaway (1973) tested the relation between the extent of decentralization in an education system and the distribution of personnel by a comparative analysis of the 1971 distribution of personnel in the education systems of Alberta, British Columbia, Victoria and Queensland. The Canadian provinces being characterized as more decentralized than the education systems of the Australian States. He found that in the two Canadian provinces the administrative staff located in the central Education Department or the offices of school districts averaged 3.34 per cent of the total personnel employed by the education system compared to an average of 1.41 per cent of the total staff employed in the two Australian systems. Similarly, out-of-school clerical and administrative support staff comprised a higher proportion of the total Canadian personnel: 3.52 per cent compared with an average of 1.81 per cent for the two Australian systems.

Holdaway also examined the hypothesis that in the more decentralized systems, the proportion of school-based teaching staff who were allocated administrative duties would be lower than in the more centralized education systems. The basis for this hypothesis was the view that where administrative support services for schools are relatively close at hand, such as in local education district offices, fewer administrative responsibilities would fall to school-based staff. In the case of school-based staff with administrative duties (defined as the number of principals, deputy principals, head teachers, heads of department, subject and year level co-ordinators time-weighted by the proportion of time spent in administration), Holdaway obtained results that supported the hypothesis: the two Australian systems average 6.93 per cent of total staff classified as in-school administrative compared to an average of 4.58 per cent for the two Canadian provinces.

On the basis of these data Holdaway concluded that the school district/education department structure of the type found in Canadian provinces was more likely to require a higher proportion of out-of-school personnel than the relatively centralized structures of the state education departments in Australia. As Holdaway himself acknowledges, in the absence of measures of the range and quality of services provided by the respective administrative structures it is difficult to draw policy implications from the data just cited. It could be that the personnel distribution data support the view that the decentralized school district model is relatively expensive to operate because it necessitates the creation of a relatively large number of administrative units. On the other hand the decentralized structure may facilitate more effective decision making because the lines of communication between the schools and administrative decision makers are shorter than in a more centralized structure (Hughes, 1977). In this regard, there is some evidence that school principals are strongly supportive of the role of education regions (South Australia, 1981).

In terms of the current debate within Australia about the appropriate extent of devolution of administrative authority to education regions and to schools, it may be that the Holdaway study is able to offer little guidance because the relatively autonomous local school board structure of the Canadian education system entails a far greater decentralization of authority than that proposed by most Australian advocates of decentralization within education systems. What may be more appropriate is to employ the Holdaway methodology solely within an Australian context to determine whether the increased devolution of authority to schools and education regions that has occurred in both Victoria and Queensland over the decade since the Holdaway data were collected has been accompanied by changing proportions of non-school-based and school-based administrative personnel in the manner suggested by the Holdaway thesis. Unfortunately this is not possible because the data base available to us is not strictly comparable with that employed by Holdaway. The relationship between system structure and resource deployment is however likely to be an important area of further research.

Decentralization and Change

The degree of centralization of an education system may also be important in influencing the way in which the system evolves and adapts to changing circumstances. Archer (1979) develops this argument in an analysis of the development of the education systems of England, France, Denmark and Russia; the argument is an important one and deserves some elaboration here. Commencing with the premise that education systems have the characteristics they do because of the goals of those who control the systems, she argues that when change occurs it is because of either a change in the goals of those in power, or the usurping of these individuals and groups by competitors with new goals.

Accordingly, she argues that an understanding of change in education systems necessitates an understanding of the factors which facilitate the acquisition of authority by certain individuals and groups as well as an understanding of the factors which influence the formation of their goals.

In acquiring this understanding, an awareness of the factors influencing the origins of the state education systems is of paramount importance. Specifically, Archer argues that the early development of government education systems can be characterized as either 'restrictive' or 'substitutive'. A restrictive origin is one in which coercion has been utilized to transfer control of education from one group (normally, religious bodies) to another (the State). By contrast, a substitutive origin entails the establishment of state educational institutions to compete with those already in existence. Using these criteria, Archer labels the origins of the state education systems of France and Russia as restrictive and those of England and Denmark as substitutive. This schema is also useful in categorizing the early development of the government education systems in Australia and New Zealand. Until about 1870 in each of the Australian colonies a limited number of public schools coexisted with denominational schools which in the main were in receipt of government financial assistance, a situation that was clearly 'substitutive' in Archer's terminology. In New Zealand the position at that time was more diverse; some provinces such as Nelson, attempted to establish extensive public school systems, while others such as Auckland were content to provide assistance to the existing denominational schools. As such, the New Zealand provinces before 1876 provided examples of both substitutive and restrictive systems.

By the early 1870s however, the prevailing view about the role of public education had shifted considerably throughout most of Australasia. Whether for reasons of economy, secularism, or the growth of liberal thinking, over a period from 1850 to 1870 in all colonies except Western Australia legislation was enacted to ensure the dominant role of the government school as the provider of education, a goal generally achieved by limiting the financial assistance available to denominational schools. There is little doubt as to the intention behind such legislation:

> . . . in most parts of the country, the State was not to be limited to a gap-filling role of the type it played in England from 1871. The liberal-democratic ethos of Australia in that age ensured that it would be more than a competitor . . . the consequence was that the great majority of elementary school pupils were to be educated in public schools and those institutions were to be the instruments of equalization . . . and if uniformity was to be the educational desideratum of the time, then the surest means towards its fulfilment was centralized control. (Hyams and Bessant, 1972:50)

By this reckoning the origins of the modern state education systems of Australia were decidedly restrictive in nature. The ready characterization of the origins of the modern state education system in New Zealand is a little more difficult. The Education Act of

48

1877, while centralizing control of financial assistance to public schools with the national government, left much of the control of those schools to the local education authorities. However, as within each region the government schools were intended to be dominant and in fact became so, the New Zealand state education system can be characterized as being closer to restrictive than to substitutive in origin, and as such can be grouped with the Australian systems for discussion purposes.

For Archer the origin of a government education system is critical in explaining the character which that system acquires: those with restrictive origins emphasize unification and systematization while those with substitutive origins feature differentiation from other social institutions and a high degree of internal specialization. These characteristics in turn affect the nature and speed of change in the education system. Centralized systems, because they exhibit a concentration of power which is typically difficult to displace are characterized by a 'stop-go' pattern of change:

> . . . education can change very little in a centralized system between
> . . . bouts of legislative intervention. Patterns of change therefore follow a jerky sequence in which long periods of stability (i.e. changelessness) are intermittently interrupted by policy-directed measures. (Archer, 1979:617)

It is not difficult to recognize much of the history of the Australian and New Zealand government education systems in these terms. Decentralized education systems by contrast change in a different manner since all demands for change do not have to be passed upwards to the political centre. Consequently in such systems:

> . . . change is never-ending, it is constantly being initiated, imitated, modified, reversed and counteracted at the level of the school, the community and the nation. Equally however, it is usually undramatic, frequently indefinite, and commonly specific and local in application . . . This has been termed the incremental pattern . . . (Archer, 1979:618)

To the extent that the arguments of Archer are valid they indicate something of the way in which the moves towards a decentralization of authority evident in each of the government education systems in Australia and New Zealand are likely to shape the character of those systems. Educational institutions are likely to become increasingly variegated and as a whole the system is likely to appear more stable even though significant changes may still be occurring in specific localities. Indeed the notion of an education 'system' may, if the pressures towards decentralization are given their full rein, become less useful in describing the provision of government education. This is perhaps a little too prescient given the relatively small degree of decentralization to regions and schools which has actually occurred in most government education systems in Australia and New Zealand. What can be said with some confidence however is that it will be difficult to reverse the trend towards decentralization of authority; once groups and individuals have been delegated greater control over their environment it will be difficult to reverse the trend towards decentralization of authority; once groups and individuals have been delegated greater control over their environment it will be difficult to persuade them to relinquish such power. Consequently, despite the fits and starts with which the trend towards decentralization may proceed it is hard not to believe that it is likely to become a permanent feature of government education systems and as such to significantly alter the character of these systems.

CHAPTER 3

THE SCHOOLS: THEIR SIZE AND STRUCTURE

In spite of the overall similarity in the pattern of education that has developed in the government school systems of Australia and New Zealand, there are important variations in practice between the eight systems that have consequences for the provision of staff and resources to schools. In describing the variations in the structure of schools in the eight systems, this chapter seeks to draw out some of these resource usage implications as well as identify policies and practices from which future changes are likely to stem.

In each of the government school systems of Australia and New Zealand, the years of compulsory school attendance are remarkably similar. In each system, students are required to be enrolled from their sixth birthday, and are generally unable to leave school until they have at least reached their fifteenth birthday. In Australia, for these nine years of compulsory schooling, the structure of school provision is quite similar between the education systems. Students commence their education in a primary school and at the age of around 12 or 13 years generally transfer to a secondary school. In New Zealand the position is more complex because of the existence of Intermediate Schools which enrol large numbers of students for two years in a transition period between primary and secondary school. In general, the major structural and policy differences between the government education systems exist in the years before, and after, the compulsory school years. The first part of this chapter describes and discusses the more important of these differences.

Age of Entry to Primary School

In all systems children are legally required to attend school from their sixth birthday enrolling, if necessary, on the day they turn six years. However, most children begin their formal schooling at an earlier age. For children who are younger than six years the following practices apply.

Australian Capital Territory. Students must be at least five years of age before they can enrol at a government primary school. Schools may enrol beginning students by having a discrete enrolment at the start of each semester (normally 31 January and 15 July respectively) or by monthly or continuous enrolment in the first semester. School boards must approve any proposal for continuous enrolment during the first semester and only after agreement has been given by the Parent Association of the pre-school which supplies the largest number of students. Children who turn five after mid-July can only enrol at the beginning of the following school year.

New South Wales. Since 1972, children enrolling in the kindergarten year (Year K) should be five years of age prior to 1 August, that is aged four years nine months by 30 April. Enrolments can continue up to 30 April and students may be enrolled on the day that they become eligible, or in groups after they become eligible depending upon the policy of the school.

Victoria. In the larger primary schools students may be enrolled at the beginning of the school year if they will reach the age of five years before 30 June, provided sufficient accommodation is available. Enrolments at these schools after 1 July are restricted to those who will reach six years of age before 31 December. In the smaller primary schools students may be enrolled at the beginning of the half year in which they will reach five years. Students younger than these ages may not be enrolled without Departmental approval. A limited number of primary schools are experimenting with continuous entry of students from the time they reach the age of five years.

Queensland. Students may be enrolled at the beginning of the school year provided they will reach five years of age before the end of February. There is no policy of continuous enrolment for primary schools. However, students may enrol at a State pre-school centre on or after their fourth birthday provided a vacancy exists.

South Australia. No child can be enrolled in a government school other than a Child Parent Centre before the age of five years. Admission of children aged five years is a matter of parental choice and as a minimum, schools enrol students at the beginning of each term. Where possible, students are enrolled more frequently than this and a significant number of schools enrol students on a continuous basis.

Western Australia. Students enrol for the first year of primary education at the beginning of the year in which they turn six; there is no policy of continuous enrolment. In 1979, some 24,000 children, most of whom were aged five years, were in voluntary attendance at pre-primary centres. Approximately 10,000 of these children attended centres attached to government schools.

Tasmania. Children aged four years as at 1 January are eligible to be enrolled in Kindergarten classes which are usually conducted on a half-day basis. Preparatory classes are available to children aged between 5.0 and 5.5 on 1 January; students aged between 5.6 and 5.11 as at 1 January may enrol in Year 1. Some limited experimentation with continuous entry is occurring.

New Zealand. A long-standing policy of permitting enrolments on the fifth birthday has operated, and practically all children do enrol on their fifth birthday. Attendance becomes compulsory at the age of six years.

The information presented above indicates that although all systems require school attendance from the age of six years, some differences between the systems exist in the age at which students normally enrol, and whether or not the enrolments are on a continuous basis. These factors are of course interrelated. If a policy of continuous enrolment at age five operates for all children, as in New Zealand, the normal entry age is clear and universal. If, on the other hand, students enrol in discrete groups such as in Western Australia where enrolment commences at the beginning of the year in which children turn six, the normal entry age falls within an age band of up to 12 months.

Under each of the entry policies described above, students in the beginning class of primary school are likely to differ fairly widely in age. The extent of such age differences, and the degree to which they continue through the primary school year levels and into the secondary school will be influenced by class promotion policies and the organizational form of the early primary years. In this context, de Lemos (1981) in a review of the limited research data available on continuous enrolment policies stated that:

> . . . while there is no direct evidence on the claimed advantages or disadvantages of the (continuous entry) system of school enrolment, there is evidence from other sources which would suggest caution in adopting such a method of school admission. (de Lemos, 1981:3)

A major factor contributing to this cautious assessment was that continuous enrolment may lead to children spending differing amounts of time in the early school years and thereby causing some problems in promotion from the infant to middle levels of the primary school. One reaction to this situation could be the adoption in the infants section of vertically structured teaching groups containing students from different year levels. Indeed, as reported in a companion volume (Ainley, 1982), in systems in which continuous entry is widespread, vertical grouping in the early primary years is relatively common. The likelihood of students admitted on a continuous enrolment basis spending differing amounts of time in the early years of primary school, could be viewed as a strength of the practice since it allows for the adoption of differential programs to cope with and foster the individual development of children. It is this view of the advantages of continuous entry in New Zealand which has supported the continuation of the practice over such a long period in that country.

Research evidence on the relative advantages and disadvantages of continuous enrolment policies is scanty. Accordingly, the approach adopted by several systems of trial testing continuous entry policies in a small number of schools, seems an appropriate manner in which to proceed. One of the factors influencing the effectiveness of any change to entry age policies will be the pre-school experiences of young children. Pre-school provision is discussed in the next section.

Pre-school Education

The extent of provision of pre-school education and the administration of its provision are two important areas for this study. The extent of pre-school provision is important because of the implications of childrens' pre-school educational experiences for the structure of the early primary years. The administration of pre-school education, and the role of the Education Department in its administration, can have important resource implications in terms of finance, buildings and personnel. Before these issues are elaborated, a brief description is provided of the administration of pre-school education in the eight education systems. This description draws heavily on the material provided in the review of pre-school policy, practice and research prepared by the Commonwealth Department of Education (1981).

Australian Capital Territory. The ACT Schools Authority is the major administrative body for pre-school education. The Commonwealth Department of Education provides and maintains pre-school buildings and grounds as well as staffing each pre-school. Parents meet other costs including the purchase and maintenance of equipment. Most pre-schools are located within, or are adjacent to, primary school sites.

New South Wales. Major administrative responsibility is divided between the Department of Youth and Community Services and the Education Department. The Education Department has established pre-schools within over 80 primary schools in designated high need areas, while the Department of Youth and Community Services provides advisory services to over 1000 licensed pre-school and day-care centres administered outside the Education Department. In addition, the Kindergarten Union is responsible for the administration of over 80 sessional pre-schools, and there is extensive local government and community involvement in pre-school provision. Recurrent costs in government pre-schools are met by Commonwealth subsidy and State government supplementation. In licensed non-profit-making centres provided by community groups 20 per cent of agreed staff salaries are met by the state government.

Victoria. The Health Commission has the major administrative responsibility for pre-schools. The Commission works in co-operation with local government and community groups who are responsible for the day-to-day operation of pre-school centres. The State government subsidizes staff salaries in pre-schools and some other operating expenses; the remainder of recurrent funding is supplied by local government and voluntary community groups.

Queensland. The Education Department shares major administrative responsibility for the position of pre-school education with the Creche and Kindergarten Association, an organization of independent community kindergartens. The Department is responsible for the centres established by itself and also for those relinguished by the Association to the Department. About two-thirds of pre-school enrolments are in state centres, most of which are associated with primary schools. In small, mainly country schools, integrated classes of pre-school and Year 1 students have been established where pre-school enrolments have been insufficient for a separate unit.

South Australia. The Education Department provides pre-school facilities through child/parent centres and the Kindergarten Union (a statutory authority) administers kindergartens. The term child/parent centre was developed in reflection of the emphasis on a co-operative home and school relationship. All child/parent centres and kindergarten are funded through the Childhood Services Council which operates as the planning, co-ordinating and funding authority for the State.

Western Australia. Since 1978 pre-school education has been under the jurisdiction of the Early Childhood Branch within the Education Department. Pre-school centres that prior to 1978 were conducted by parent committees under the co-ordination of the Pre-School Board are able to choose between affiliation with a primary school or continuation as an independent unit. If the latter option is adopted the Early Childhood Branch meets the salary costs of the centre and the local committee is responsible for maintenance and other running costs.

Tasmania. The Education Department is responsible for pre-school centres, most of which are part of the school system either through an administrative link to an adjacent primary school or physical incorporation in a primary school.

New Zealand. The two main types of pre-school services are provided by free kindergartens and play centres, provided mainly by two national voluntary organizations which receive government support. The free kindergartens generally offer more formally structured programs than the play centres.

In terms of the involvement of the Education Department in the provision of pre-school education a continuum exists amongst the systems. A high degree of Education Department involvement is evident in the ACT, Queensland, Western Australia and Tasmania. In South Australia, the Education Department shares responsibility with another statutory authority. In New Zealand, the Education Department is involved in policy formulation for the sector, and co-ordinates some pre-school funding, but has little direct involvement in the provision of pre-school education. In New South Wales, the Education Department's role is largely confined to the provision of pre-school facilities in areas of high need. The other end of the continuum is reached in Victoria where the responsibility for pre-school education lies with the Health Commission. It should be noted, however, that the systems which have relatively little Education Department involvement in pre-school education are generally those with the most extensive provision of kindergarten or preparatory classes for five-year-olds.

Table 3.1 Pre-School Education: Proportion of Children Enrolled in the Year Before School Entry. Australian States and Territories, 1977 and New Zealand, 1978

	ACT	NSW	Vic.	Qld	SA	WA	Tas.	NZ
Proportion of Children Enrolled in Pre-School in the Year Before School Entry (%)	90+	40 approx.	63+	84	92	72	80	83

Source: Commonwealth Department of Education, 1981.

Note: In most systems the data refer to the proportion of 4-year-olds who were enrolled in pre-school. The exception is Western Australia where the data refer to 5-year-olds.

Less diversity is evident in the funding of pre-school education. In the Australian States, most funding comes from a combination of state and commonwealth government sources. In general, the capital and staffing costs of pre-school education centres are met by government with parental contributions being confined to some equipment purchases and other relatively minor operating expenses. The major difference between the funding in the States is the extent to which the government funding is co-ordinated through the Education Department.

Participation in pre-school education has grown markedly in both Australia and New Zealand over the past 15 years. Data on participation rates is as yet relatively limited and comparison between the systems should be made with caution because of the different definitions and measurement techniques used by the systems (Rowlands, 1979). As some guide to the relative level of provision, Table 3.1 is presented. Although the data contained in the table are qualified, and to some extent are now dated, they do indicate that there are some sizeable differences between the systems in the proportion of children engaged in pre-school education immediately prior to the first primary school year. For those systems for which more extensive data were available, Table 3.2 shows the involvement of children aged between three and five years in pre-school and early primary school, and the division of responsibility between the Education Department and other agencies for the administration of those programs. Once again however, deficiences in the data base from which the table was derived impose limits on its value for comparative purposes.

Despite the marked growth in the provision of pre-school education since the mid-1960s, in contrast to other OECD nations pre-school participation in Australia appears to be relatively low. Although the problems of international comparisons in this area are considerable and the data should be treated with caution, a rough guide to the relative level of pre-school provision can be obtained from 1976 data collected by the OECD (1981). These data showed age-specific enrolment rates and were used to derive a measure of the average number of years of education received by various age groups. For Australia the index revealed that in 1976, on average children aged between three and five years had received 0.9 years of education (OECD, 1981:29). Amongst the 18 OECD countries for whom comparable data were published, only Denmark, Portugal and Switzerland had lower average years of attendance for this age group than Australia. For the OECD group, the median average was 1.6 years; New Zealand, with 2.0 years was in the upper half of the table. The difference between Australia and New Zealand on this index could be attributed to two main factors. First, as discussed in the previous section, almost all New Zealand children commence primary school on their fifth birthday. In Australia, while an increasing number of children enrol for primary school when they turn five, and some can enrol even before their fifth birthday, in most instances children in Australia commence primary school some time after their fifth birthday. Secondly, as discussed above, participation rates in pre-school educational activities are higher in New Zealand than in Australia as a whole.

Gross comparative data on pre-school provision of the type cited above are not necessarily a good guide to determination of the level of participation in pre-school educational activities to which individual countries should aspire. Apart from inadequacies in the data set, as Psacharopoulos (1982) notes such considerations will be influenced by assessments of the relative costs and benefits of expanding pre-school provision. Such assessments are likely to vary from one national setting to the next. Psacharopoulos provides a conceptual framework for the measurement of the costs and benefits of extending pre-school provision which can be used for such assessments. On the benefits side for example, Psacharopoulos identifies two major potential benefits of extended pre-school provision: its enhancement of early childhood development and the opportunities which it provides for increased parental labour force participation. For both measures Psacharopoulos is able to cite considerable evidence in favour of the early exposure of children to educational programs. On the costs issue, the question is less clear. The financing of pre-school education does divert resources from other uses, but from the perspective of the education budget Psacharopoulos produces international evidence to show that pre-school education tends to be less costly than primary education. Furthermore, as he notes, pre-school education which is effective in enhancing child development may have the effect of lowering the costs of providing subsequent educational programs.

The questions of the aggregate level of provision of pre-school education and the appropriate division of the costs of that provision between parents and governments are likely to grow in importance in both Australia and New Zealand and also overseas. In France for example, which already has near-universal full-time participation in pre-school education by children aged between three and five years, there is now active debate on the lowering of the compulsory school-entry age from six years. While such a policy change has not been canvassed in either Australia or New Zealand, the gradual extension of pre-school education facilities in both countries over the past 15 years has

Table 3.2 Number and Age Distribution of Children Engaged in Pre-Primary and Early Primary Programs in Several States and New Zealand, 1979

System	Age group (years)	Education Dept. Managed[a]		Non-Education Dept. Managed[b]		Total	Cohort size[c]	Participation rate %
		Pre-primary activities	Primary school enrolments	Pre-primary activities	Primary school enrolments			
Queensland (August 1979)	3.0-3.11	180[w]	-	-	-	180	34451	0.5
	4.0-4.11	12401[w]	-	322[y]	-	12723	36029	35.3
	5.0-5.11	11310[w]	16675[x]	294[y]	3660[z]	31939	37695	84.7
South Australia (June 1979)	3.0-3.11	1120	-	5294	-	6414	19168	33.5
	4.0-4.11	2560	34	14800	616	18010	19590	91.9
	5.0-5.11	172	15926	1006	2855	19959	20274	98.4
Western Australia (August 1979)	3.0-3.11	511	-	1761[w]	-	2272	20791	10.9
	4.0-4.11	5719	4	5825	12	11560	21141	54.7
	5.0-5.11	6926	7381	4665	1331	20303	21796	93.1
Tasmania (August 1979)	3.0-3.11	67[w]	22[x]	96[y]	-	185	6714	2.8
	4.0-4.11	2997[w]	5[x]	84[y]	46[z]	3232	7032	46.0
	5.0-5.11	3399[w]	2635[x]	75[y]	849[z]	6958	7259	95.9
New Zealand (September 1979)	3.0-3.11	10477[w]	-	7351[y]	-	17828	n.a.	n.a.
	4.0-4.11	28737[w]	187[x]	7432[y]	-	36356	n.a.	n.a.
	5.0-5.11	193	59993	79[y]	-	60265	n.a.	n.a.

General Notes:

[a] Includes programs conducted at government primary schools, and programs staffed through the Education Department budget.

[b] Includes programs offered by other government departments and private agencies.

[c] As at 30 June 1979; derived from ABS, Estimated Age Distribution of the Population: States and Territories of Australia, 30 June 1979, Cat. No. 3201.0.

Other Notes and Sources: See Appendix III.

meant that children now come into contact with formal education programs at an earlier age than ever before. The implications of this development, particularly in terms of the organization of the early primary school years remain to be explored.

The Structure of the Primary Schools

In addition to the pre-school centres associated with schools and conducted by some Education Departments, the majority of the systems provide a kindergarten class or its equivalent for children on entry to school. In the Australian Capital Territory and New South Wales this class is known formally as the Kindergarten Class; in Victoria and Tasmania as the Preparatory Class; and in South Australia as the Reception Class. In Queensland and Western Australia the equivalent class does not exist and students have their first contact with the formal school system at a slightly higher age than in the other systems. In the ACT, New South Wales, Victoria and Tasmania, most children spend a full year in the Kindergarten or Preparatory Class. In South Australia and New Zealand where policies of continuous entry into the Reception and Junior 1 Classes respectively operate for many students, children move up to Year 1 at regular intervals and thus some children may spend a relatively brief period in the beginning class.

On this diverse range of practices at the beginning of schooling the systems build different numbers of primary school years. In the ACT, New South Wales, Victoria and Tasmania there are six years of primary schooling, although it should be noted that these are the systems with substantial one year programs in Kindergarten Classes and, in general, children have been at school for seven years before they move to secondary schooling. In Queensland, South Australia and Western Australia there are seven years of primary schooling. New Zealand students in the main spend eight years in primary schooling before moving to the secondary school system; some 70 per cent of primary students spend the final two years before secondary school enrolled in an intermediate school. The intermediate schools of New Zealand are discussed in more detail later in this chapter.

In some systems the size of a primary school, and sometimes its geographical location, determine whether or not the early years of primary schooling are spent in separate establishments known as infant schools. Larger schools, particularly those in metropolitan areas, are more likely to have separate infants schools in the systems where this structure operates. In some instances the infants school may be located in a separate building from the rest of the primary school, although this is less common in schools of recent construction. At one time, in some systems the teachers located in infants sections were trained by means of special programs and at special centres. Thus strong traditions for the provision of programs in the infants sections and schools were established. In the main however, current practice is for all primary school teachers to

Table 3.3 Average Age by Year of School in the Government Schools of Australia and New Zealand 1964 and 1979 (in years and months)

		Primary							Secondary				Senior colleges	
	Year	K	1	2	3	4	5	6	7	8	9	10	11	12
Australian Capital Territory	1979	5.8	6.8	7.9	8.9	9.8	10.9	11.9	12.9	13.10	14.10	15.10	16.11	17.11
New South Wales	1964	5.7	6.8	7.10	8.11	10.0	11.1	12.1	13.2	14.1	15.1	16.0	17.0	..
	1979	5.7	6.8	7.8	8.9	9.9	10.10	11.10	12.10	13.11	14.11	15.11	16.10	17.10
Victoria	1964	..	6.1	7.7	8.8	9.8	10.8	11.8	12.9	13.9	14.9	15.8	16.8	17.8
	1979	5.8	6.8	7.8	8.8	9.8	10.8	11.8	12.8	13.9	14.9	15.9	16.9	17.11
Queensland	1964	..	6.1	7.2	8.4	9.5	10.5	11.5	12.5	13.5	14.6	15.6	16.6	17.6
	1979	..	6.1	7.1	8.2	9.2	10.2	11.3	12.3	13.3	14.3	15.3	16.2	17.4
South Australia	1964	5.6	6.1	7.2	8.3	9.5	10.6	11.6	12.7	13.7	14.6	15.6	16.6	17.3
	1979	5.6	6.0	7.0	8.0	9.0	10.0	11.1	12.1	13.1	14.2	15.1	16.2	17.2
Western Australia	1964	..	6.3	7.3	8.3	9.3	10.3	11.3	12.3	13.5	14.4	15.4	16.3	17.3
	1979	..	6.2	7.2	8.2	9.2	10.2	11.2	12.2	13.3	14.3	15.3	16.3	17.3
Tasmania	1964	5.6	6.5	7.8	8.9	9.9	10.9	11.10	13.0	14.0	15.0	16.0	16.9	17.7
	1979	5.8	6.8	7.9	8.9	9.9	10.9	11.9	12.9	13.9	14.9	15.9	16.11	18.2

							Intermediate						
	As at 1 July	Primers	Std. 1	Std. 2	Std. 3	Std. 4	Form 1	Form 2	Form 3	Form 4	Form 5	Form 6	Form 7
New Zealand	1964	6.2	7.8	8.8	9.8	10.8	11.8	12.9	13.9	14.8	15.9	16.8	17.6
	1979	6.2	7.8	8.8	9.8	10.8	11.8	12.8	13.8	14.8	16.0	16.9	17.7

Sources: ABS, Schools Australia. Cat. No. 4202.0; Education Statistics of New Zealand.

Note: Australian data apply to 1 August, New Zealand to 1 July.

be trained in similar institutions. The development of this practice has been associated, in most systems, with a decline in the policy of maintaining separate infants schools. As some vestige of this policy, in most systems larger primary schools generally receive a senior teacher designated to co-ordinate the lower year levels.

Where once the promotion of a child from one year to the next in primary schools was largely dependent on reaching a certain standard of achievement, in all systems the practice has evolved of promoting largely by age. This practice has presumed advantages for the personal and social development of the child, whereas promotion by performance produced greater homogeneity in the ability and levels of achievement of class groups. Today, promotion through the years of primary schooling is almost universally by age, and only in the cases of children who are young for a school year group and who are struggling to keep pace with their classmates is the repeating of a grade encouraged. However, a companion volume (Ainley, 1982) reveals evidence to suggest that fluidity in the teaching groups of primary schools is more extensive than is often supposed.

Transition To and Progress Within the Secondary School

Transfer from Primary to Secondary School

In each of the systems, students in general transfer from primary to secondary school at about the age of 12 years. In the Australian Capital Territory, New South Wales, Victoria and Tasmania, secondary education commences at Year 7 while in the remaining State systems Year 8 is the first year of secondary school. In New Zealand the position is a little more complex. Approximately 30 per cent of primary students in New Zealand are enrolled in full primary schools that provide eight years of education to Form 2 level which is approximately equivalent to Year 7 in Australia in terms of average student age. The remaining 70 per cent of primary students attend contributing primary schools which offer programs through to Standard 4 or Year 5 in Australian terms. Upon the completion of this level, the students transfer to an intermediate school for a two further years of schooling, Forms 1 and 2, before moving onto a secondary school. Thus it is not until Form 3 level, which is approximately equivalent to Year 8 in Australia, that we can speak of most New Zealand students having made the transition to secondary school. Therefore it is Year 8 (or Form 3 in New Zealand) that is the first year level common to all eight systems for which secondary education is provided.

Despite the fact that Year 8 is the first year of secondary education in four of the systems, while Year 7 is the first year in the other four systems, the age of transition from primary to secondary education is quite similar between the systems. As is shown in Table 3.3, in 1979 amongst the Australian systems the average age of students in the first year of secondary education ranged from 12 years and 8 months in Victoria to 13 years and 3 months in Western Australia. This relatively narrow range implies agreement between the systems as to the most appropriate age for the commencement of secondary education.

As was noted in the previous section, promotion in the primary school now tends to be based more upon the age and social development of students rather than based as previously, on requirements relating to prescribed academic standards. These more liberal promotion policies of the primary schools have two important implications for secondary schools. First, it means that the students now entering the secondary school are on average younger than was the case 15 or so years ago, as is shown in Table 3.3, with the largest decrease, six months, being recorded in South Australia. The second implication is that secondary schools are likely to be receiving from the primary schools a less academically homogeneous group of students than was formerly the case. These two factors combine to underline the growing importance of facilitating the transition to secondary school, a concern which has prompted a number of secondary schools to make modifications in the structure of the early secondary years as well as stimulating a growing body of research on the transition period.

School Leaving Age

In all systems except Western Australia and Tasmania a student is legally able to leave school upon reaching the age of 15 years. In Tasmania the minimum leaving age is set at 16 years, though, exemption before this age may be sought. In Western Australia students may not leave school until the end of the school year in which they turn 15 years. All systems permit students under special circumstances to leave school before reaching the stipulated minimum age, and as such, in no system does the age participation rate of young people aged one or two years below the minimum leaving age reach 100 per cent.

The Structure of Secondary Education

In all systems secondary education is offered until the end of Year 12 or its equivalent. Consequently, in the Australian Capital Territory, New South Wales, Victoria and Tasmania, secondary education is provided for six year levels while in the remaining systems secondary education spans five years. In general, the secondary school sector has more diversity of school type than the primary sector. The different types of secondary school maintained in each system are described later in this chapter. Before discussing the relation between average age and year level in the secondary sector of the eight systems, the structure of the upper secondary year levels in New Zealand is briefly described.

In New Zealand, most secondary school students are able to be accredited for university entrance during Form 6. In practice, however, most of the successful candidates continue with their secondary studies for an additional year known as Form 7. This is because the examinations which determine the recipients of scholarships and bursaries for tertiary study are conducted at the end of Form 7, and also because Form 7 is mandatory preparation for some university courses. However, the fact that at the end of Form 6 students can gain university entrance means that this stage has come to be recognized in New Zealand by employers and others as an indication of general academic competence. This means that there is a relatively large attrition rate between the Form 6 enrolments of one year and the Form 7 enrolments of the next. For example of the 33,700 students enrolled in Form 6 in 1978 only some 28 per cent were enrolled in Form 7 in 1979. This figure underlines the selective nature of the Form 7 population and implies that when calculating New Zealand retention rates it may be more appropriate to consider Form 6 rather than Form 7 as the final year of secondary school.

The structure of the Form 5 level in New Zealand schools also deserves comment. Most students at the end of Form 5 sit for a nation-wide School Certificate examination, the results being employed by schools to assist in the placement of students in Form 6. Form 5 is also the terminal year for many students entering apprenticeships and jobs such as clerical and sales occupations. The importance of this examination means that each year a number of Form 5 students are those who, having failed to gain complete success in the examination the previous year, are repeating subjects; in 1979 about 15 per cent of Form 5 students were in this category. The students who repeat Form 5 are therefore in at least their fourth year of secondary schooling, which is a similar length of time to most Form 6 students. This consideration should be borne in mind when examining the retention rates for Forms 5 and 6 later in this chapter.

Even though the average age of entry to secondary school declined between 1964 and 1979, as shown by Table 3.3, this was not always reflected in a general decline in the average age in each secondary year level. For example, in Victoria, Tasmania and to a lesser extent New Zealand, there was a slight rise in the average age of students in the upper secondary years. Factors contributing to this could include a proportionately greater tendency in these systems to repeat Years 11 or 12, and/or a relatively larger increase in the numbers of mature-age students returning to study.

Table 3.3 also shows the difference between the systems in the average age at which students complete their Year 12 studies. For example, the average age of Year 12 students in Victoria at the completion of the school year would be about 18 years and 3 months, compared to 17 years and 6 months in South Australia. When taken in conjunction with the average age at which students commence primary school, these data show that the length of time which students spend over the total span of their primary and secondary education varies between systems. The extent of this variation is determined by policies associated with the age of admission to primary school, the number of years of primary and secondary education, and promotion from one year level to the next.

Retention Rates

The retention rate of students to the upper secondary school is influenced by a range of factors including the socio-economic composition of a society, its degree of urbanization, the range and availability of employment opportunities, the provision of tertiary education programs and policies of the school systems. Sturman (1979) has reviewed Australian and overseas research on the factors influencing retention rates.

Within the context of this study the particular interest in retention rates arises because of their resource usage implications. The relationship between retention rates and resources is complex. On the one hand, as is shown in the companion volume (Ainley, 1982), secondary schools on average allocate considerably more personnel resources to programs in the upper year levels than to the lower year levels. This implies that a rise in retention rates is likely to generate demands for additional resources for secondary schools and concomitant increases in education expenditure. From this perspective, a system with a relatively high retention rate to the Year 12 level is, other things equal, likely to incur higher per pupil costs than a system with a relatively low retention rate. On the other hand, resource difficulties may be generated for schools and systems with relatively low retention rates. Where the numbers remaining to the upper secondary year levels are low it may be difficult to achieve economies of scale in the conduct of programs, and as a consequence per pupil expenditure may be higher than would otherwise be the case.

The relationship between retention rates and the per student operating costs of schools and education systems will be largely dependent upon the extent to which changes in retention rates affect the degree of utilization of the capacity of the schools or systems in question (Riew, 1981). If a rise in retention rates leads to the number of enrollees exceeding the capacity of the school or system (as measured by the quantity of available personnel and material resources), the consequent need to expand the capacity of the system in order to cope with the increased enrolments could well lead to an increase in the per student operating costs of the school or system. In those systems or schools where the capacity exceeds the actual number of enrolments, an increase in the retention rate could have the opposite effect: the higher student numbers could lead to a decline in per student costs. This would arise because the fixed costs of maintaining the system would be spread across more students.

A rise in retention rates can mean more than simply an increase in student numbers. The composition of the student body can also be affected. The increase in the retention rates of students to the upper secondary school that occurred in most systems

64

over the 1960s and 1970s, resulted in an increase in the range of student aptitudes and expectations at the upper secondary school level. This change in the nature of the student body has been associated with a broadening in the types of programs which schools are expected to provide to meet the needs of senior secondary students. The increased range of programs in some systems, and in some instances new structures to provide for senior secondary students, have direct implications for resource deployment.

The broad picture of retention rates to upper secondary school in Australia and New Zealand is shown in Tables 3.4 and 3.5. Table 3.4 shows the apparent retention rate to Years 10, 11 and 12 for 1981 in the Australian States and the ACT, and the corresponding 1980 data for Forms 5, 6 and 7 in New Zealand; retention rates are presented for the government school sector and for all schools in each system. Table 3.5 shows the trend in apparent retention rates to Year 12 in Australia and Form 6 in New Zealand for the government school sectors over the past decade. In both tables, the retention rates are apparent as they were derived by expressing the number of students enrolled in the relevant year level as a proportion of those who commenced secondary school the appropriate number of years previously. As such, the rates do not take into account the effects of migration, the repeating of classes, or inter-system transfer on the school population.

On the basis of the retention rate data contained in Tables 3.4 and 3.5, the following general comments can be made.

1 Almost without exception, in each of the eight education systems, the apparent retention rates are higher for non-government than for government schools. Some of this difference could be due to net student transfer from the government to the non-government sector.

2 In most instances the female retention rate exceeds the male retention rate, with the crossover point between male and female retention rates to Year 12 occurring in most systems in the mid-seventies.

3 The retention rate varies markedly between systems, particularly at Years 11 and 12. The relatively high retention rates in the Australian Capital Territory are particularly noticeable, and could be attributable to a number of factors including the nature of the employment and tertiary education opportunities in the ACT and the relatively high level of career aspirations of students in that system (Sturman, 1979).

4 In several systems there is a marked decline in the retention rate between the penultimate and the final years of secondary school. In some instances this could be explained by structural factors. For example, in Victoria the phenomenon could in part be explained by the existence of technical schools which terminate at the end of Year 11; most students from such schools who wish to continue their studies beyond Year 11 would transfer to Tertiary Orientation Programs conducted by

Table 3.4 Retention Rates in Government Schools and All Schools for Students Apparently Remaining to Years 10, 11 and 12 (Australia) 1981; Forms 5, 6 and 7 (New Zealand), 1980

Government Schools - G All Schools - A		Year 10			Year 11			Year 12		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Australian Capital Territory	G	93.3	92.0	92.6	78.4	81.8	80.1	59.6	71.4	65.4
	A	94.1	93.3	93.7	78.1	79.6	78.8	63.2	72.8	67.9
New South Wales	G	83.3	86.2	84.7	31.1	38.8	34.9	25.5	30.9	28.1
	A	86.7	89.0	87.8	36.6	43.0	39.7	31.0	34.9	32.9
Victoria	G	89.2	90.0	89.6	58.7	68.0	63.1	19.4	28.7	23.8
	A	91.1	92.6	91.8	65.2	74.6	69.7	28.8	37.6	33.1
Queensland	G	93.5	97.9	95.6	41.1	48.8	44.9	28.3	35.7	32.0
	A	95.2	98.3	96.7	48.5	54.7	51.5	36.4	41.1	38.7
South Australia	G	89.1	91.6	90.3	70.3	74.4	72.2	30.3	35.5	32.8
	A	91.5	94.3	92.8	75.2	79.9	77.5	35.8	42.3	38.9
Western Australia	G	93.0	95.0	93.9	45.4	58.4	51.9	27.0	31.8	29.3
	A	94.1	96.1	95.1	51.3	62.3	56.7	32.6	37.7	35.1
Tasmania	G	83.8	89.9	86.7	26.3	34.8	30.4	20.1	28.8	24.3
	A	85.0	91.9	88.4	27.5	37.9	32.6	23.9	29.6	26.7
		Form 5[a]			Form 6			Form 7		
New Zealand	G	95.4	102.0	98.5	46.3	53.1	49.6	14.3	12.6	13.4
	A	97.2	102.0	99.5	49.1	54.9	51.9	15.8	13.2	14.6

Source: ABS, Schools Australia. Cat. No. 4202.0; Education Statistics of New Zealand.

[a] About 15 per cent of Form 5 enrolees are repeat students.

Table 3.5 Retention Rates in Government Schools for Students Apparently Remaining to Year 12 (Australia) and Form 6 (New Zealand) by Sex for Years 1970-1981

		1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Australian Capital Territory	M	71.7	63.0	66.1	60.0	61.1	64.4	60.5	65.9	67.8	69.8	63.1	59.6
	F	52.1	49.5	62.1	54.9	59.7	61.8	59.9	65.9	67.9	71.2	68.3	71.4
	T	62.6	56.3	64.2	57.5	60.4	63.1	60.2	65.9	67.8	70.5	65.6	65.4
New South Wales	M	31.8	33.0	34.7	33.9	31.3	31.6	31.9	31.1	30.6	28.5	25.6	25.5
	F	23.4	24.5	26.8	27.9	28.1	28.6	30.6	33.2	34.3	33.4	31.4	30.9
	T	27.8	28.9	30.9	31.0	29.8	30.1	31.3	32.2	32.4	30.9	28.4	28.1
Victoria	M	24.8	24.7	25.0	24.3	23.0	24.0	22.5	21.8	20.0	19.1	18.6	19.4
	F	24.7	25.0	25.4	27.0	26.6	29.0	30.8	29.7	29.1	27.6	28.7	28.7
	T	24.8	24.8	25.2	25.5	24.7	26.4	26.4	25.5	24.3	23.1	23.4	23.8
Queensland	M	24.7	26.3	29.3	26.7	26.6	25.6	28.6	28.9	29.2	28.1	29.1	28.3
	F	20.2	21.4	22.7	25.2	26.4	28.3	30.5	33.0	33.9	34.3	35.2	35.7
	T	23.1	23.9	26.1	26.0	26.5	26.9	29.5	30.9	31.5	31.1	32.1	32.0
South Australia	M	25.2	29.0	32.6	31.2	28.4	31.6	31.5	28.6	28.4	29.0	31.1	30.3
	F	17.6	20.3	22.3	24.0	24.8	28.9	30.7	30.5	32.1	32.7	34.3	35.5
	T	21.6	24.8	27.7	27.6	26.7	30.3	31.1	29.5	30.2	30.8	32.6	32.8
Western Australia	M	24.0	24.8	26.6	27.8	27.8	28.1	30.2	27.6	27.1	27.1	25.9	27.0
	F	18.7	20.2	21.9	25.4	26.2	28.8	30.1	31.1	30.7	29.8	30.0	31.8
	T	21.4	22.6	24.4	26.7	27.1	28.5	30.2	29.3	28.8	28.4	27.8	29.3
Tasmania	M	16.3	20.9	22.7	21.4	20.0	23.7	22.6	23.5	21.3	21.0	21.8	20.1
	F	12.4	13.8	17.9	19.7	19.6	23.3	24.2	25.3	25.1	29.0	29.6	28.8
	T	14.4	17.4	20.4	20.6	19.8	23.5	23.4	24.4	23.1	24.8	25.5	24.3
New Zealand	M	43.3	43.0	43.0	42.7	41.4	42.1	43.7	43.7	46.1	46.0	46.3	n.a.
	F	37.2	38.1	40.2	41.3	42.4	44.2	46.3	48.5	50.4	51.4	53.1	n.a.
	T	40.4	40.6	41.7	42.0	41.8	43.1	45.4	46.0	48.2	48.6	49.6	n.a.

Sources: ABS, Schools Australia. Cat. No. 4202.0; Education Statistics of New Zealand.

Note: Prior to 1980 the school census date was 1 August for the Australian systems. In 1980 the census date was changed to 1 July, which corresponds to New Zealand.

some tertiary institutions. There is also evidence that these programs are attracting students who would otherwise have enrolled in Year 12 in a high school. In New Zealand the marked decline in retention rates between Form 6 and Form 7 would be partly explained by the fact that students may gain the initial University Entrance qualification at the end of Form 6.

5 As shown in Table 3.5, over the course of the decade there has been an overall increase in the apparent retention rate to the final year of government schooling. However, marked differences are evident in the rate of increase in the retention rate between 1970 and 1981. In the Australian Capital Territory, Victoria and New South Wales, the total Year 12 retention rate in 1981 was little different to that applying in 1970, while in the other five systems, quite significant increases are evident over the decade. Such differential rates of growth in the rate of retention of students to the upper years of secondary education can, as elaborated earlier in this section, create different degrees of pressure upon the resources of the education systems and have differential impact upon the per student costs of providing and operating schools.

The combination of the retention rates presented in Tables 3.4 and 3.5 for Australia and New Zealand and the minimum school-leaving age of 15 years which is common to both countries, means that in comparison with other OECD nations, Australia and New Zealand have a relatively low proportion of the 16 to 18-year-old age group engaged in full-time secondary education. One indication of this is supplied by an index of the average years of education experienced by different age groups in OECD countries (OECD, 1981). This index, which is derived from age-specific education participation rates, is based on 1976 data and is analogous to that used earlier in the discussion of pre-school education. Amongst the 20 OECD nations for which this index was available, the average years of education experienced by the 16 to 18-year-old age group ranged from 0.9 years in Austria and Portugal to 2.3 years in the United States, with a median of 1.4 years. Australia and New Zealand, which both had an average of 1.2 years of education experienced by the 16 to 18-year-old age group, were in the lower half of the table (OECD, 1981).

In the absence of an increase in the minimum school-leaving age, participation rates in upper secondary education in Australia and New Zealand will only rise if there is an increase in retention. A number of the factors which affect retention rates are beyond the direct influence of the education sector. However, it could well be that policies of the education systems which shape the structure of secondary schools and influence internal patterns of school organization also affect retention rates. The differential impact of education policies upon retention rates is likely to be a research area of increasing importance.

Types of Schools

In each of the government education systems, schools are generally classified as either primary or secondary. As described earlier in this chapter, amongst the Australian systems at least, the structure of the primary schools is essentially similar. The only major differences between the systems are whether the primary schools offer a preparatory year and whether primary education runs for six or seven years. The major structural differences between the systems exist at the secondary school level, and in the form of the combined primary-secondary schools in those systems in which they operate. The major secondary and combined primary-secondary school types operated by each Australian system are briefly described below. The major school types operated at both levels of education in New Zealand are more extensively described. Following the presentation of this descriptive material, the rationale behind the development of some of the more distinctive school types is explored. It should be noted that in addition to the schools described below, each system maintains a number of special schools designed to cater for students who are physically, emotionally, mentally, or socially disabled. Table 3.6 records 1979 data on the number of schools of different types operated by the eight systems, the year levels which they serve, and the average enrolment size of each school type.

Australian Capital Territory

Senior Colleges. The senior colleges cater for students in the final two years of secondary schooling. The colleges offer a diverse curriculum program. An extensive course accreditation procedure guides curriculum development.

High Schools. The high schools in the ACT are co-educational and cater for Years 7-10.

New South Wales

High Schools. These schools provide a full six year course leading from Year 7 to the Higher School Certificate Examination at Year 12. Most of these schools are co-educational even though in the metropolitan area a significant number of single sex schools exist.

Central Schools. These schools provide courses at both primary and secondary levels through to Year 12. The central schools are mainly located in country areas and have relatively small secondary enrolments.

Victoria

High Schools. These schools provide a full secondary course of six years from Year 7 through to Year 12. Some country schools have been established as combined

Table 3.6 Types of Government Schools and Enrolments, Australia and New Zealand 1979[a]

System	Type of school	Year range	Number of schools	Number of students	Average number of students per school
ACT	Primary	K-6	61	24597	403
	High	7-10	16[x]	10593	662
	Secondary College	11-12	6	3811	635
NSW	Primary	K-6	1688	497993	295
	Central	K-12	66	20688	313
	High	7-12	353	282664	801
Vic.	Primary	K-6	1683	371625[x]	221
	Central	K-8	19	5546[y]	292
	Post-primary	K-9			
	Higher-elementary	K-10			
	Consolidated	K-12			
	High	7-12	282	166902	592
	Technical	7-11	107[z]	63664	595
Qld	Primary	1-7	973[x]	224591	231
	Primary/Secondary	1-10	85	20070[y]	236
	High	8-12	131	98217	750
SA	Primary	R-7	419[v]	134654[w]	321
	Rural	R-8	37	714[x]	19
	Special Rural	R-10	7	426[y]	61
	Area	R-12	45	14452[z]	321
	High	8-12	100	72118	721
WA	Primary	1-7	513[v]	130464[w]	254
	District High	1-10	53	14866[x]	280
	High	8-10	13[y]	60082[z]	761
	Senior High	8-12	66		
Tas.	Primary	K-6	165[x]	38167	231
	District	K-10	27[y]	8692[z]	322
	High	7-10	35	21625	618
	Secondary College	11-12	7	3795	542
NZ[x]	Full Primary	K-7	1987	393381	198
	Contributing Prim.	K-5			
	Intermediate	6-7	145	73652	508
	Area/District High	K-12	36	9476[y]	363
	Form 3-7 High	8-12	216	197518	914
	Form 1-7 High	6-12	43	17331	403

Sources: ABS, Schools Australia. Cat. No. 4202.0; System Level Reports; Annual Reports of the Education Departments; Education Statistics of New Zealand.

Notes: See Appendix III.

high-technical schools or high schools with a technical component. Although some single sex high schools remain, most are co-educational.

Technical Schools. These schools offer a five year course of general education with the last two years having a vocational orientation. While most technical schools cater exlusively for boys, the schools are gradually converting to co-educational schools in accordance with stated policy. Many technical schools also cater for a TAFE component.

Combination of Primary and Secondary. There is a range of schools combining all primary grades with a varying range of secondary grades. Many of these are the result of historical or geographic circumstances. Such schools include: Central schools (all primary grades and the first two years of secondary schooling); Post-primary schools (rural primary schools providing up to three years of secondary schooling); Higher elementary schools (all primary grades plus a four-year secondary course to Year 10); and Consolidated schools (providing schooling from Preparatory to Year 12).

Queensland

High Schools. These are co-educational schools offering five years of post-primary general education from Year 8 to Year 12. Almost all the high schools are co-educational.

Secondary Departments of Primary Schools. These are schools located in some country areas which are attached to a primary school. In general, they offer three years of secondary education through to Year 10.

South Australia

High Schools. These schools provide a range of secondary education courses from Year 8 to Year 12. The former technical high schools have become merged with the high schools, although some former technical high schools still specialize in courses with a technical and commercial bias. High schools are not subjected to zoning requirements and may develop special emphases. Nearly all high schools are co-educational.

Area Schools. These schools, which were formed by consolidating a number of smaller primary schools in a rural district, offer a primary school course with the addition of up to five years of secondary education.

Rural and Special Rural Schools. These schools like area schools were formed by the consolidation of small primary schools to serve a rural district. They offer a primary school program and the first few years of secondary education.

Western Australia

Senior High Schools. These provide a full secondary course from Year 8 to Year 12. All senior high schools are co-educational.

High Schools. These schools provide three year secondary courses from Year 8 to Year 10.

District High Schools. These schools are mainly located in country areas and offer a full primary program plus three years of secondary education to Year 10.

Tasmania

Secondary Colleges. These colleges, which provide courses for the two final years of secondary education, were first established as matriculation colleges in the early 1960s. In 1980 these colleges were linked to colleges of technical and further education, and provide jointly not only academic courses but also a range of technical and non-academic courses.

High Schools. These co-educational schools are established in cities and larger country towns. They provide academic, commercial and technical courses from Year 7 to Year 10.

District Schools. These schools are located in rural communities and are divided into primary and secondary sections running through to Year 10. The secondary section offers courses similar to those available in high schools for the first four years of secondary education. Ways of utilizing the facilities of these schools to extend the provision of further education to country areas are being explored.

New Zealand

Seven major types of school exist in New Zealand.

Form 3 to Form 7 Secondary Schools. These schools provide courses for students between Forms 3 and 7 which are approximately equivalent to Years 8 to 12 in Australian terms. The majority of new entrants come from an intermediate school. The schools have some autonomy in the selection and appointment of the principal and the staff, but tend to follow relatively standardized curricula leading to external examinations at Form 5 and Form 6 levels. These schools tend to be located in the urban areas and larger country centres. While most of these schools are co-educational, a significant minority of the schools in urban centres are single sex.

Form 1 to Form 7 Secondary Schools. The program of these schools runs from Form 1 to Form 7 or Years 6 to 12 in Australian terms. Aside from the primary oriented program in Forms 1 and 2, these schools offer a curriculum little different to that of the Form 3 to 7 secondary schools. Almost all of the schools are co-educational and most are located in country areas.

Area Schools. These schools are a relatively new development. They provide a program over all levels of schooling from beginning students to Form 7 or Year 12 in Australian terms. The schools are mainly located in rural areas and provide primary education for students from the immediate vicinity, and education from Form 1 upwards for students from contributing primary schools over a wider area.

District High Schools. As with the area schools, these schools provide a program over the full age range of primary and secondary education. These schools however draw their secondary students from a smaller area than the area schools and as such have lower levels of secondary enrolments. District high schools are gradually being reorganized into area schools and relatively few now exist.

Intermediate Schools. These schools enrol students for two years in Forms 1 and 2 or Years 6 and 7 in Australian terms. While the curriculum structure of these schools is basically similar to that of the primary schools, the appointment of specialist subject teachers to the intermediate schools have allowed them to develop structures with some features of secondary schools. All intermediate schools are co-educational and most are located in urban areas and larger country centres.

Full Primary Schools. These schools offer a program covering the full range of primary education from beginning students to Form 2 (Year 7 in Australian terms). All these schools are co-educational and most are located in country areas.

Contributing Primary Schools. These schools offer a program spanning the beginning primary years through to Standard 4 which is approximately equivalent to Year 5 in Australia. Upon completing this level students transfer either to an intermediate school or to a Form 1 to 7 secondary school. Contributing primary schools tend to be located in urban areas or in larger country centres. All these schools are co-educational.

Special Schools

Each system caters for a small proportion of the school population in special schools and special classes for handicapped children. Policies of inclusion of handicapped children within normal classes have been strongly advocated during recent years, and they have tended to reduce the numbers of children who are catered for in special schools and special classes in all systems. Special schools are staffed according to different bases from other primary and secondary schools and it was considered that the resource allocation issues raised by special schools were beyond the scope of this study.

Distribution of Students Between School Types

One of the major structural differences between the eight education systems is the length of secondary education which they offer. As may be expected, those systems which operate five years of secondary education (namely Queensland, South Australia, Western Australia and New Zealand) have a smaller proportion of the total student population enrolled in secondary schools than the remaining four systems which operate six-year secondary schools. In 1979 for example, the five-year secondary systems had between 30 per cent (New Zealand) and 35 per cent (South Australia) of the total student population classified as secondary students. By contrast, amongst the six-year secondary systems the equivalent proportion ranged from 36 per cent in New South Wales to 39 per cent in Tasmania.

Such differences have implications for the relative operating costs of the systems since, on a per student basis, government spending on government primary schools is only about 60 per cent of the level of government expenditure on government secondary schools (Commonwealth Schools Commission, 1981). This relation implies that other things being equal, the higher the proportion of students enrolled by a system in secondary schools, the higher will be the operating costs of the system. This issue is addressed in more detail later in the report.

Another difference between the systems that is revealed by Table 3.6 is the relative importance of the combined primary-secondary schools in educational provision. In the ACT, such schools do not exist, and while various forms of combined primary-secondary schools operate in New South Wales, Victoria and New Zealand, in these systems they enrol only a small proportion of all students. In the other four systems however, such schools enrol a significant proportion of students ranging from six per cent in Queensland to 12 per cent in Tasmania. The differences between the systems in regard to the provision of education in combined primary-secondary schools is probably most marked when account is taken of the proportion of all secondary students who are enrolled in combined primary-secondary schools. In Victoria, for example, in 1979 only 0.6 per cent of government school secondary students were enrolled in the combined primary-secondary schools, while in Tasmania, about 10 per cent of secondary students were enrolled in such schools.

Combined primary-secondary schools are primarily a response to the difficulties of providing educational opportunities to sparsely populated areas. It is not surprising therefore that in Australia at least, it is the States with the lowest proportion of population residing in large cities which have the most extensive systems of combined primary-secondary schools. Issues associated with the provision of such schools are addressed later in this chapter.

School Structure: An Elaboration

The listing above of the various school types operated by each education system probably exaggerates an impression of differences between the eight systems. Each system has three basic school types: primary, secondary, and with the exception of the ACT, combined primary and secondary schools in rural areas. However, some systems have developed certain types of schools to meet particular needs and circumstances. The secondary technical schools of Victoria, the senior secondary colleges of the ACT and Tasmania, and the intermediate schools of New Zealand are school types that have no close parallels and as such deserve further comment. Before this is done, the coincidence in each system of a basic pattern of primary schools, secondary schools, and combined primary-secondary schools is discussed.

The Distinctions Between Primary and Secondary Schools

In the seven Australian government systems, students attend a primary school before transferring at the age of about 12 years to a secondary school. In the main, the primary and secondary schools in each system are staffed separately and they differ from each other in the training backgrounds of their teachers and also in the organizational practices which they adopt. These distinctions are not peculiar to the Australian education systems but are also evident in many other systems throughout the world.

The origins of these distinctions can be traced to the early years of the school systems. In each system the first government schools were almost exclusively primary schools providing a basic education for children up to the age of about 13 years. For the first few decades of each system's development, the Education Departments concentrated upon building and staffing an extensive system of primary schools. A few government secondary schools were established in the capital cities and larger country towns in most systems, but until the early 1950s the character of government education in Australia and New Zealand was overwhelmingly dominated by the primary school.

Following the Second World War, both countries experienced an increase in the demand for post-primary education. The response was to expand rapidly the provision of secondary schools and recruitment for secondary teaching. In most cases this expansion occurred after several decades of virtual inactivity in government secondary education, as illustrated by the fact that the secondary schools built during the 1950s were, in a number of systems, the first secondary schools to be established for 30 or 40 years. To co-ordinate and manage this rapid expansion of secondary education, most systems greatly enlarged their head office secondary administrations.

The rapid growth of the primary schools occurred in the first 30 years of most government education systems while that of the secondary schools has been concentrated into the past 30 years. Under such circumstances, it is not surprising that the primary and secondary school structures which evolved differed considerably from each other. The character of the early secondary schools is a further explanatory factor in the evolution of differing structures in the primary and secondary schools. In general, the early secondary schools in most systems were few in number and were oriented towards preparing a small number of students for university entrance. Many of the teaching staff for these schools were recruited directly from university graduates. It is not surprising therefore that when the rapid expansion of secondary schools occurred in the 1950s, the model for this expansion was the type of secondary school already in existence. It is not until recently that widespread debate has occurred on the appropriateness of this model of secondary education (e.g. Schools Commission, 1980).

A further factor contributing to the development of distinctions between primary and secondary schools has been a commonly accepted view of the educational development of children and young people. In simplified terms there has been an influential view that young children need the close relationship made possible by the one teacher - one class model of primary schooling, whereas students of secondary school age are held to require the breadth and depth of intellectual activity which may be made possible by specialist subject teachers. This issue is addressed further by Ainley (1982).

There are signs, however, that the traditional distinctions between primary and secondary schools are becoming less sharply defined. South Australia, Western Australia, Victoria and New Zealand have moved to restructure their central administrations along the functional lines of personnel, buildings, and curriculum in contrast to the former administrative divisions between primary and secondary schools. The process of integration has been carried to the level of the school in South Australia where limited experimentation with R-12 schools, offering a curriculum integrated across the whole range of primary and secondary education, has occurred. At the school level, the companion volume (Ainley, 1982) shows that the traditional models of primary and secondary schools are not universal. A number of primary schools reported that at least some of their students were taught by a number of different teachers over the course of a teaching week. Furthermore, the school survey revealed that at the lower secondary school level a small number of schools were structured around relatively fixed class groupings in which students are taught by only a few teachers over the teaching week. These practices, although not widespread, indicate some convergence in the internal structure of primary and secondary schools.

Combined Primary-Secondary Schools

As was noted earlier, in addition to the distinction in each of the eight systems between primary and secondary schools, another common structural feature is the operation of combined primary-secondary schools in rural areas in all systems except the ACT. As Table 3.6 showed, in no systems do such schools as a group enrol more than 12 per cent of all government school students, even though in the more sparsely populated systems such as Queensland and Western Australia, the combined primary-secondary schools comprise a significant proportion of the total number of government schools. The common adoption of this structural type indicates an acceptance of the educational and economic advantages of providing educational programs for rural areas by this means. These factors were summarized well in the submission of the Department of Education to the 1961 Commission on Education in New Zealand:

> It is difficult to find an alternative (to the district high school) although the Department has no desire to establish very small units. In many areas geographical factors prohibit the amalgamation of the small units to provide better-sized schools and their location is such that many of these will never become much bigger through natural growth. If the secondary departments were closed, parents would have to choose between sending their children to boarding schools (and some could not afford to do this) or enrolling with the correspondence school. No matter how good correspondence tuition may be, it cannot replace personal instruction. (New Zealand, 1962:170)

Over more recent times, the declining school age population in many rural areas and the improved transportation to larger country centres has adversely affected the viability of particular combined primary-secondary schools. This question of viability is generally focused upon the secondary components of these schools where enrolments may be very small relative to the average secondary school. For example, as shown by Table 3.6, in Victoria the 19 combined primary-secondary schools that operated in 1979 had an average secondary enrolment of 71 compared to the average high school enrolment of 592. If these small enrolments are spread across the full range of secondary schooling, it is difficult for the school to offer a wide curriculum range, and under these circumstances the attractiveness of the school to local parents diminishes even further. These difficulties of the combined primary-secondary schools are well illustrated in the case study of a district high school reported in the companion volume (Sturman, 1982).

In response to the difficulties of mounting broad curriculum programs in combined primary-secondary schools with relatively small secondary enrolments, two groups of policies can be detected. First, there are policies which attempt to group the secondary components into larger units with the objective of increasing their educational and economic viability. This was the thrust for example of the 1962 Currie Report in New Zealand (New Zealand, 1962), which recommended the consolidation of the secondary components of district high schools into secondary schools separate from primary schools and with a minimum of 180 students. Secondly, and often in conjunction with such policies, are staffing schedules built upon much more favourable student-teacher ratios for the secondary components of combined primary-secondary schools than for secondary schools in general. The objective of these resource allocation policies is to enhance the capacity of the combined primary-secondary school to offer a reasonable curriculum range.

Both sets of policies are not without their costs. The risk with the consolidation process is that while economies of scale in the provision of personnel, buildings and equipment may be achieved, compelling students to travel large distances from their homes on a daily basis may adversely affect retention rates and consequently make the task of achieving a more viable enrolment size that much more difficult. Further, as argued by Hind (1975), once the consolidation process reaches a certain point any potential economies of scale may be largely diminished by the consequent increase in student transportation costs. The financial costs of the more liberal staffing policies for combined primary-secondary schools are obvious enough, but such costs should be kept within the perspective of their relatively small share of the total education budget. It should also be noted that the work in several systems of groups of teachers and Departmental project teams towards developing an integrated curriculum and organizational structure for the combined primary-secondary schools offers the promise of potential administrative, educational and economic advantages within these schools.

Distinctive School Structures

As was noted earlier in this chapter, as well as the school structures which are common to the eight education systems, within most systems distinctive school types have been developed. Three of the more interesting of these are the intermediate schools of New Zealand, the technical schools of Victoria and the senior secondary colleges of the ACT and Tasmania. This report is not the place for a comprehensive discussion of these school types. It is hoped, however, that by pointing out several of the principal features, perceived advantages and perceived problems of these three types of schools, some of the implications of alternative school structures may be discerned. In addition to the general material presented below, a detailed case study of each school type is reported in the companion volume (Sturman, 1982).

The Intermediate Schools of New Zealand

Intermediate schools cater for students at the Form 1 and 2 levels which are approximately equivalent to Years 6 and 7 in Australia. Most of the intermediate schools are located in urban areas and the larger country centres. As can be seen from Table 3.6, in 1979 the intermediate schools had an average enrolment of just over 500 compared to an average of 200 students in the full and contributing primary schools. In 1979 the intermediate schools enrolled about 70 per cent of the Form 1 and 2 student population in government schools, with the remainder of this group of students being distributed between the full primary schools, the Form 1-7 schools, and the area and district high schools.

The intermediate schools are administered by the education boards and are considered as part of the primary school system. The teaching staff of the intermediate schools comprises primary school teachers who are appointed on the same basis, and in the same numbers, as for a primary school of equivalent size, and a group of subject specialists drawn from the secondary teaching service. The number of secondary specialists appointed is dependent upon the school enrolment, but generally includes art, music, technicrafts, and in larger schools, physical education and science teachers. In terms of class teaching groups, students are taught by a primary teacher for the majority of the week, and spend the remainder of the teaching week being taught in the specialist teaching areas (Ainley, 1982). As such, the internal organization of the intermediate schools contains elements of both primary and secondary school models.

The intermediate schools were established in the 1930s and replaced the three year junior high schools that were established in 1922. The intermediate schools have been a controversial issue in New Zealand. This controversy had several components (Watson, 1964). First, there were some organizational difficulties associated with the grouping of primary and secondary-trained teachers in the one school. Secondly, before the intermediate schools became widespread, some concern was expressed that they provided a more extensive curriculum structure than was possible in conventional primary schools, and as such, the diversity of school structures which they engendered was argued in some quarters to comprise elements of inequality of educational provision. Allied to this was the concern in a number of districts that the establishment of a nearby intermediate school, by proving attractive to parents and students, could adversely affect the viability of local primary schools. In the main however, the rapid increase in the number of intermediate schools over the 1960s and 1970s has largely served to dissipate the controversy surrounding the role of the schools in the New Zealand education system.

The impetus to the development of the intermediate school was the desire to increase and make more worthwhile the course of secondary studies. The argument in the 1920s and 1930s was basically that a 6-3-3 year pattern of primary school, junior high school, and senior high school, should replace the existing 8-4 year pattern of primary and secondary education because:

> . . . the one year's instruction for which 25 per cent of the pupils remain in school can be of little value, as it means that only a beginning is made in the study of several new subjects. If such pupils had begun upon a specially adapted secondary course at an earlier age it is most probable that they would have been able to leave school at the same age as at present with a much more efficient educational equipment. Report of the Minister for Education, 1921 (quoted in New Zealand, 1962:164).

The three year junior high schools were therefore clearly intended to be part of the post-primary sector. The advent of the 1930s economic depression, which led to a downturn in educational expenditure, resulted in the establishment of two year institutions with less generous staffing schedules and less diverse curricula than had originally been intended (Watson, 1964). The outcome was that the intermediate schools came to be administered and staffed as large primary schools, albeit more generously staffed with regard to the provision of teachers in specialist subject areas. The intermediate schools are therefore something of a hybrid structure: administered as primary schools, staffed mainly with primary teachers, but with some secondary teachers who are subject specialists, adopting some practices from each sector with regard to teacher and student groupings, and straddling the primary and secondary sectors.

The proponents of the intermediate schools argued that the hybrid nature of these schools can assist the transition between primary and secondary education by offering some secondary school organizational features within what is basically a primary school setting. Counter to this were the arguments of those who argued that the intermediate schools imposed an additional educational step upon students which may have hampered the transition process (McLaren, 1974). The 1962 report of the Commission on Education in New Zealand (the Currie Report) had little doubt as to the value of these schools:

> The intermediate system is more economical and efficient not only educationally, but also, in the long run financially. (New Zealand, 1962:175)

Accordingly it recommended that

> . . . every effort should be made to grant to all pupils in Forms 1 and 2 the facilities of the intermediate systems. (New Zealand, 1962:176)

When put into effect this recommendation resulted in the proportion of the relevant cohort attending intermediate schools almost doubling between 1960 and 1980, and now the intermediate schools are accepted as a permanent feature of the New Zealand system. It is generally considered that the further spread of the intermediate school system is likely to be relatively slow because the areas not covered by the system are basically rural, and it is unlikely that schools of sufficient size to offer the advantages of intermediate schools could be economically provided for in these areas.

The Technical Schools of Victoria

By 1950 a technical school system was established and operating in each of the six Australian States and also in New Zealand. Thirty years later it was only in Victoria that a substantial technical school system remained. In 1980 there were 108 technical schools in Victoria enrolling some 66,000 students or just over one-quarter of all students in Victorian secondary schools. Amongst boys the coverage of the technical schools was even more extensive: just over 40 per cent of male secondary students in Victorian government schools were enrolled in a technical school.

The reasons for the demise of technical schools in all systems except for Victoria are complex and cannot be done full justice in this report. The development in most systems of specialist institutions for the training of apprentices and the acceptance in those systems, as reflected in the reports of official Committees of Enquiry, of the benefits of co-educational comprehensive secondary education would appear to be major factors contributing to the integration of the technical schools with other secondary schools. That the forces towards co-educational comprehensive secondary education were also strong in Victoria cannot be denied and the fact that a separate technical school system has remained in Victoria is probably explained by the characteristics of those schools and the nature of the Victorian economy. The governing councils of Victorian technical schools were, and are, relatively strong and independent and thus were a force against integration. Further, the heavy concentration of manufacturing industry in Victoria created a demand for the vocational training which the technical schools provided. Over and above these structural factors, the technical schools have themselves modified their traditional practices and programs in response to the demands for co-educational comprehensive education. For example, while most technical schools only enrol males, the proportion of female students in the technical schools has increased considerably: in 1960 females comprised only 12.5 per cent of students in junior technical schools compared to just over 20 per cent in 1978. Perhaps even more significantly, the technical schools have sought to broaden their educational program. Therefore while technical education is defined under the Education Act (1958) to include

> . . . instruction in the principles of any science or art as applied to industries, accompanied by individual laboratory or workshop practice, and . . . subjects connected with or preparatory for industrial, commercial, agricultural, mining, domestic, or artistic pursuits . . .

it is clear from documents such as Aims, Objectives, Strategies and Structures published in 1979 by the Technical Schools Division (Victoria, Education Department, Technical Schools Division, 1979) that the curriculum offered in many technical schools is considerably broader than this. The first three years are devoted to general education which is fairly similar to that of the high schools. The final two years have a more vocational orientation. A major difference between technical and high schools is the nature of their teaching force. Two-thirds of the teachers (i.e. those teaching subjects other than humanities, mathematics, science or some business studies) are required to have substantial industrial or commercial experience ranging from a minimum of two years in some jobs to a minimum of 10 years in some trades. These teachers, therefore, tend to be older than high school teachers when they start teaching.

A review of the future of secondary technical schools is currently under way in Victoria.

Senior Secondary Colleges in Tasmania and the Australian Capital Territory

During the 1960s, centralized matriculation classes came to be established in several Tasmanian high schools; these classes grew to become full scale matriculation colleges and eventually evolved into the senior secondary colleges. Selby Smith (1980) provides an extensive review of the process by which the decision to establish the intitial centralized classes came to be reached. In his review he cites the considerable controversy amongst parents, teachers, and the general community over both the general value of centralized matriculation classes and the particular details of where they were to be located. By contrast, the decision to establish senior secondary colleges in the Australian Capital Territory when that system gained independence in 1974 from the New South Wales Department of Education generated relatively little controversy in the ACT (Mildern and Mulford, 1980). The easier path of the senior colleges in the ACT was probably due to two main factors. First, as is extensively described in Hughes and Mulford (1978) and Mildern and Mulford (1980), the establishment of the ACT Schools Authority and its organizational characteristics and processes was accompanied by widespread discussion and participation by all interested parties. Given this participatory genesis it is not surprising that a consensus on the establishment of the senior colleges was reached. It is probably also true that by the time in which the debate about the senior colleges was occurring in the ACT, there was widespread acceptance of the educational value of such institutions. In part, this acceptance would have been due to observation of the experiences of the Tasmanian matriculation colleges.

Despite the different origins of the senior colleges in the ACT and Tasmania, they share a number of common features. In both systems students enter the colleges at the beginning of Year 11 and are able to choose courses of study from a diverse curriculum range covering the equivalents of Years 11 and 12 in conventional secondary schools. Student groupings within the colleges tend to be fluid and there is some evidence (e.g. Anderson, Saltet and Vervoorn, 1980) that in terms of the quality of inter-student and student-teacher relationships the colleges are able to provide a more adult and satisfying environment than is possible in most secondary schools. As was shown in Table 3.6, in both systems the average enrolment of the secondary colleges is slightly below that of the average high school in the same system.

Differences between the colleges in Tasmania and the ACT do exist. The ACT colleges appear to have considerably more curriculum and organizational autonomy than do the Tasmanian colleges, and as is shown in Chapter 5, the ACT colleges are allocated proportionately more personnel resources vis-a-vis the ACT high schools than are the Tasmanian colleges relative to high schools in Tasmania. The ACT and Tasmanian senior secondary colleges both represent a significant break with the traditional notion of a secondary school which provides five or six years of education through to Year 12, and it is likely that education systems will increasingly focus attention upon the senior secondary college as an organizational option.

Burke, Hudson and Gould (1981) counsel that when education systems examine the ACT and Tasmanian senior secondary colleges, it is the Tasmanian experience which is the more appropriate guide to the likely performance of senior colleges in their own system. This view is generated by retention rate data of the type presented in Tables 3.4 and 3.5. Those tables show that retention rates to the upper seondary year levels in Tasmania tend to be below those that operate in the other Australian systems. One interpretation of these data is that the break in secondary schooling imposed by a senior secondary school structure adversely affects Tasmanian retention rates because of the necessity for many students to travel some distance or even to leave home altogether in order to attend a secondary college in one of the major cities. Such considerations are argued to be of less importance in the ACT because of its compact nature and possible also because the relatively advantaged socio-economic composition of the ACT is associated with a more favourable attitude amongst parents and students towards continuation at school. Contrary to this however, is the observation (Sturman, 1979) that retention rates in Tasmania have always tended to lie below those of the other Australian systems, and that, as shown by Table 3.6, over the 1970s the increase in the retention rate to Year 12 in Tasmania was proportionately greater than that which occurred in any other system. The issue is clearly complex and deserves further investigation.

Size of Schools

The distribution of schools by size is an important factor influencing the resource costs of operating an education system. For this reason alone the size of schools is an issue worthy of examination. In addition, a considerable body of evidence is accumulating on the relationship between school size and cognitive and affective outcomes for students. The cost and outcomes implications of school size are taken up in Chapters 6 and 7 respectively. The purpose of this section is to provide the background descriptive material necessary for those discussions.

Tables 3.7(a) and 3.7(b) show the size distribution of government schools in Australia and New Zealand respectively. The tables have been constructed from different data formats. In the case of Australia it was possible to obtain from the Australian Bureau of Statistics (ABS) grouped data (i.e. number of schools in the enrolment ranges 1 to 35, 36 to 100, 100 to 200 and so on) for each of the government school systems. These data enabled the extraction of school size for the primary and secondary components of combined primary-secondary schools as well as for the 'stand alone' primary and secondary schools. Since the combined primary-secondary schools are an important feature of several systems, and since, as is shown in Chapter 5, the

Table 3.7(a) Distribution of School Size by School System in Australia 1979[a]

	Primary School Units[b]				Secondary School Units[c]			
System	Number	Average enrolment	Standard deviation	Coefficient of variation	Number	Average enrolment	Standard deviation	Coefficient of variation
Australian Capital Territory	61	403	154	0.38	22	655	182	0.28
New South Wales	1755	296	288	0.97	419	697	341	0.49
Victoria	1702	225	218	0.97	409	571	265	0.46
Queensland	1058	231	270	1.17	219	498	471	0.95
South Australia	510	289	251	0.87	163	479	400	0.84
Western Australia	566	253	196	0.77	157	415	427	1.03
Tasmania	192	235	179	0.76	69	408	298	0.73
Aust. Gov. schools[d]	6257	248	250	1.01	1525	543	378	0.70
Aust. Non-gov. schools[d]	1833	212	168	0.79	731	401	288	0.72

Source: ABS and the official publications of the school systems.

[a] Except for the ACT, the calculations in the table were made from grouped data on school size distribution.

[b] Primary school units are defined as primary schools and the primary components of combined primary-secondary schools; special schools are excluded.

[c] Secondary school units are defined as secondary schools (including senior colleges in the ACT and Tasmania, and technical schools in Victoria) and the secondary components of combined primary-secondary schools; special schools are excluded.

[d] Includes schools in the Northern Territory and special schools.

Table 3.7(b) Percentages of Government Primary and Secondary Schools of Particular Sizes in New Zealand 1979

	Primary Schools[a]										
Enrolment	1 to 28	29 to 60	61 to 120	121 to 195	196 to 305	306 to 410	411 to 510	511 to 615	616 to 720	721 to 895	896 Plus
% of schools	12	20	15	9	12	13	10	7	3	1	-
	Secondary Schools[b]										
Enrolment	Below 300				301 to 500			501 to 850			851 Plus
% of schools	8				12			33			48

Source: Education Statistics of New Zealand 1980.

[a] Includes full and contributing primary schools, intermediate schools and primers to Standard 4 of area and district high schools.

[b] Includes Form 1-7 and 3-7 schools; excludes the secondary components of area and district high schools.

components of such schools tend to be staffed by similar schedules which apply to primary and secondary schools respectively, it was judged that the size distribution of the components of the combined schools could have important resource implications.

Accordingly the size data in Table 3.7(a) are classified in terms of primary and secondary school units. A primary school unit is defined as either a 'stand-alone' primary school or the primary school component of a combined school; a secondary school unit is defined in an analagous manner. The ABS schools data that are published nationally include special schools; since such schools pose particular resource questions, Table 3.7(a) excludes these schools. The New Zealand school statistics did not permit the classification of school size data in the form described above. As such, Table 3.7(b) presents the New Zealand school size data in a more conventional manner.

The format of the Australian data made it possible to provide a measure of the dispersion of school size namely the standard deviation, for each system. The ratio of the standard deviation of the school size distribution to the mean school size provides a summary statistic, the coefficient of variation, which provides an indication of the relative dispersion of school size between the systems. These measures are shown in Table 3.7(a). Also included in the table are school size data for the government and non-government school sectors of Australia as a whole. It should be noted that these include data from the Northern Territory, and that special schools were not excluded. As such, the aggregate data are not strictly comparable with the individual system data in the first part of the table.

It is clear from both tables that in all systems, secondary schools tend to be larger than primary schools. In New Zealand for example, almost 70 per cent of primary schools have less than 300 students whereas only 8 per cent of secondary schools enrol fewer than 300 students. It is only in the ACT that the size distribution of primary schools is of a similar order to that of the secondary schools. The greater preponderance of small schools in the primary sector of each system reflects geographical factors, and a model of primary schools which differs from that for secondary schools. The primary school has been held to involve a simpler model of education whereby a generalist teacher interacts with a fixed group of students over a teaching week, which is in contrast to the subject oriented model of secondary schools in which relatively fluid student groups are taught by specialist teachers. This schema implies that the smallest possible unit of a primary school is that of the single teacher school, whereas the secondary school does not become viable until reasonably large numbers of teachers are grouped together.

The incorporation of these models of primary and secondary schools in staffing schedules results in a different relation between school size and per pupil operating costs in the two sectors. The secondary school model necessitates a relatively large number of staff before the school becomes viable. Accordingly economies of scale in the operation of secondary schools are not exploited fully before an enrolment figure is reached which is considerably higher than the corresponding figure for primary schools. The cost implications of school type and school size are elaborated in Chapter 6.

It is also apparent from Tables 3.7(a) and 3.7(b) that considerable variation exists between systems in the size distribution of schools within the primary and secondary sectors. With the exception of Western Australia, in each system there is greater dispersion in the size distribution of primary school units than for secondary school units. As noted above, this would be principally due to the requirements on the systems to provide primary education in a large number of locations whereas secondary education tends to be concentrated in the larger population centres. This is less the case for Western Australia where a process of primary school consolidation has, over the past 30 years, significantly reduced the number of one and two teacher primary schools in that system.

Table 3.7(a) also indicates that there are substantial differences between the systems in the relative distribution of school size. The most obvious example of this is the ACT where a compact concentration of population has led to a relatively homogenous distribution of school size within both the primary and secondary sectors. Not only does such a tightly clustered distribution have potentially significant resource implications, it also influences aspects of the school system such as the career structure for teachers. For example, because the ACT has few small primary or secondary schools, it does not have a number of the 'stepping stone' teacher promotion positions associated with such schools. Accordingly, there may be less flexibility in teacher movement in such a system if contraction occurs because of overall declining enrolments.

The systems also vary in the proportion of very small schools which they operate. For example, in the primary sectors of New South Wales, Victoria, Queensland and New Zealand, between 20 and 30 per cent of primary schools enrol less than 35 students. In the other four systems the corresponding percentage is considerably less than this. Since, as is shown in Chapter 6, per student operating costs are in general inversely related to school size, a school size distribution weighted towards small schools leads to higher pupil operating costs, other things remaining equal.

There are a number of factors associated with differences in the distribution of school size between systems. Some of these factors are structural and relate to considerations such as the locational distribution of population and the availability, and cost, of transportation. Other factors have more of a policy orientation and concern judgments on issues such as the educationally desirable minimum and maximum school sizes. The different types of factor influencing school size can be illustrated by an examination of the distribution of school size in the two largest Australian systems, New South Wales and Victoria.

In terms of the proportion of the population residing in large cities, both States have a similar locational distribution of population. Yet, as Table 3.7(a) shows, in both the primary and secondary sectors, New South Wales schools are appreciably larger than their Victorian counterparts. One structural factor which could help to explain this is that Victoria has a higher proportion of its student population enrolled in non-government schools than New South Wales. This could mean that the average government school in Victoria has a relatively small number of students within its catchment area, and accordingly is not able to approach the size of the average New South Wales government school without greatly increased student transportation costs. At more of a policy level, New South Wales spends more than Victoria on student transportation services. For example, in 1978-79 the New South Wales government spent $67 per government school student on student transport compared with $33 per student expended in Victoria (Schools Commission, 1981). At least part of this difference in expenditure could be attributed to perceptions in New South Wales that relatively large schools were worth the cost of relatively high transportation outlays.

School size and school policies. An interesting perspective on school size has been provided by Chambers (1981). In the context of discussing the impact of voucher systems on schools, he argued that since in the United States private schools tended to be smaller on average than public (government) schools, this was prima facie evidence of the outcomes superiority of relatively small schools. He was led to this position by the fact that as private schools have substantially more control over the size of their student intake than government schools, and as per student costs tend to decline as school size rises, private schools would only forego the cost benefits of relatively large schools if the smaller schools offered a superior educational environment. On this basis Chambers concluded that the introduction of a voucher system for the funding of government schools would most likely be associated with a decline in the relative size of those schools as the school would have increased control over the size of the student intake.

It was this argument which prompted the inclusion of data in Table 3.7(a) on the relative size distribution of government and non-government schools in Australia. As can be seen from the table, in both the primary and secondary school sectors non-government schools are appreciably smaller, on average, than their government sector counterparts, thereby going some way to supporting Chamber's hypothesis. Some caution should be exercised however, in the interpretation of the primary school data for both sectors. The relatively low coefficient of variation for the non-government primary schools indicates a degree of homogeniety of school size distribution not found in the government primary school sector. Presumably, this reflects the fact that the government primary schools are obliged to be located in a large number of small centres, a pressure that is less evident for non-government schools. The need for the government school sector to maintain large numbers of very small primary schools, which, in per pupil terms tend to be expensive to operate, could be a factor leading to the establishment of relatively large secondary schools as a form of financial counterbalance. As another view of this aspect of school size, it could be that government schools are compelled to be relatively large in size because they have to enrol all students who wish to attend. The government school student population is almost certainly more heterogeneous in capacities and attitudes than that found at most private schools. Accordingly, the typical government school is under more pressure to offer a variety of programs, and as a consequence school size needs to be greater to mount such programs in a viable form. To the extent that this argument holds, it limits the application of Chamber's hypothesis. As an aside however, as government school systems in Australia gradually remove zoning restrictions on their schools, it is probable that relatively more homogenous student groups will cluster towards particular schools. Under such circumstances, the question of the most appropriate school size would need to be re-examined.

School Size: A Student's Perspective

School size data of the type presented in Tables 3.7(a) and (b) represent what may be termed the school system perspective on school size. Another means of discussing school size is in terms of the average size of school in which a student is likely to be enrolled. The student perspective on school size reflects the distribution of students between schools of different sizes. For example several systems have a large number of small primary schools, such schools in total enrol relatively few students. Therefore in such systems, the simple mean school size contained in Table 3.7(a) will be considerably less

Table 3.8 Average School Size Weighted by Student Enrolment Distribution, Australia 1979[a]

	Primary School Units[b]		Secondary School Units[c]	
	Simple mean	Weighted student average enrolment	Simple mean	Weighted student average enrolment
Australian Capital Territory	403	461	655	703
New South Wales	296	576	697	883
Victoria	225	436	571	695
Queensland	231	546	498	943
South Australia	289	507	479	811
Western Australia	253	404	415	851
Tasmania	235	372	408	623

Source: As for Table 3.7(a).
Notes: As for Table 3.7(a).

than the average school size obtained when the distribution of school size is weighted by the distribution of student numbers between schools. The weighted mean school size for each of the Australian systems is presented in Table 3.8; for comparative purposes the simple mean school sizes from Table 3.7(a) are also recorded in the table.

As can be seen from Table 3.8, in each system students were likely to be enrolled in a school with an enrolment that was considerably larger than the simple mean school size. In general, the differences between the student and system perspectives on school size were more marked in the primary than in the secondary sector. This difference is primarily a reflection of the high number of small primary schools contained in each system. Amongst the systems, the difference between the two perspectives is most marked in Queensland. For example, although in 1979 the average primary school unit in that system had 231 students, on average a Queensland primary student was likely to be enrolled in a school of 546 students. The difference was least marked in the Australian Capital Territory, a reflection of the relatively small dispersion in that system of the distribution of school size around the mean.

Some Concluding Comments

The structure and size of the schools in an education system are important influences upon the educational programs which can be provided for students, and upon the resource costs of providing those services. Modifications to the structure of the school system represent decisions whose consequences are perhaps as far-reaching as any of those made by school systems. Therefore, it is somewhat surprising that in light of the frequent characterization of government school systems as conservative, modification to the schools structure has been one of the major areas of policy initiative in the systems. In the period between 1950 and 1970 for example, each of the systems engaged in some form of modification of existing school structures. In New South Wales, as a consequence of the reorganization that followed the introduction of the Wyndham Scheme, an additional year of secondary schooling was added. Victoria over the period of the 1950s and 1960s saw the consolidation of many one- and two-teacher primary schools into larger units, and the establishment of separate identities for what were formerly the junior technical colleges. In Queensland it was decided that from the end of 1963 primary schools would end at Year 7 instead of Year 8, as formerly. In South Australia during the 1960s and 1970s the integration of the technical and high schools occurred, and the divisions between junior primary and primary schools were lessened. In Western Australia, as in Victoria, the process of rural school consolidation was strongly evident in the fifties and sixties. Tasmania in the early 1960s initiated the development of senior secondary colleges. In New Zealand the intermediate school sector was significantly expanded during the sixties, and over the 1970s area schools gradually supplanted district schools in rural areas. In addition to these prominent modifications to the structure of schools, various systems over the post-war period have also witnessed additions to education department responsibilities in the pre-school and post-compulsory areas, as well as alterations to the range of combined primary-secondary schools in country areas.

The purposes behind the reforms to school structures in the post-war period were a mixture of the educational and the financial. In some instances, for example the formation of comprehensive secondary schools through the amalgamation of high and technical schools, the objectives were to remove what were perceived as inequalities of educational provision, and more positively, to provide all secondary students with the opportunity for a general comprehensive education. In other instances, for example the formation of senior secondary colleges and the consolidation of rural schools, it was argued that such structures were the most appropriate means of providing a variety of educational experiences at a reasonable cost.

Financial and educational strands are also evident in current debates about modifications to the existing structure of schools. There are those (e.g. Burke et al., 1981) who argue that declining enrolments in some areas and in some systems may necessitate the integration of some elements of primary and secondary schools to contain costs. Others, such as Husen (1979), argue that the demands upon the schools to cater for an increasingly diverse student population, particularly at the upper secondary level, necessitate reconsideration of the appropriate structures in this sector. Such arguments largely turn upon the advantages of providing adolescents with more flexible, adult environments than are possible in conventional secondary schools. It is of some interest to note that while these arguments have a strong educational thrust, they are of a different order to the educational arguments that were used in the fifties and sixties to support the development of comprehensive secondary schools and the consolidation of small rural schools. In those instances one of the major objectives was to remove what were perceived as inequalities evident in the conduct of differing educational programs. By contrast, the arguments that are now advanced for reform of school structures, particularly at the upper secondary level, are strongly influenced by the desire to provide a diversity of programs to meet the needs and aptitudes of the students remaining beyond the post-compulsory years. Such arguments reflect an acceptance of the view that equity of treatment is not necessarily satisfied by equality of resource provision.

It is probable that debate about appropriate school and system structures will intensify in the coming decade. In this debate it will be important to bear in mind the diversity of school structures which exist in the eight government education systems of Australia and New Zealand. This diversity indicates the importance of local factors in shaping the evolution of school structures. The diversity of school structures between the systems can also be taken as an indication that our current state of knowledge about the costs and benefits of alternative forms of school organization is insufficient to provide clear evidence about the appropriate forms of school structures. Under such circumstances, proposals for significant and far-reaching change in the structure of schools should be implemented only after careful evaluation.

CHAPTER 4

TEACHERS AND OTHER PERSONNEL RESOURCES

Types of Education Personnel

Education personnel can be classified on the dimensions of location and function. In terms of location, education personnel may be either school based or non-school based. School-based personnel are those located either in a particular school or shared between a group of schools and have as their prime responsibility a direct involvement in the educational program which the schools provide for students. School-based personnel include classroom and non-classroom teachers, social support staff such as counsellors, and operating support staff such as clerical assistants, teacher aides and groundsmen. Non-school-based personnel on the other hand are located in either central or regional offices of the education departments and have only an indirect involvement in the educational programs of the schools. Included in this group are senior education department administrators, inspectors, curriculum and research personnel, advisory teachers and clerical staff.

In practice neither the locational nor the functional classification of education personnel is always easy to make. A good illustration of this difficulty is provided by the counselling services supplied to schools in a number of systems. In systems such as Victoria, for example, the formal counselling of secondary students by trained counsellors is undertaken in the main by staff who are located in central offices and who visit schools upon request. By contrast, in New South Wales counselling staff tend to be appointed to specific schools and may serve schools in their area on request. In Victoria therefore, the majority of counselling staff would be classified as non-school based, while in New South Wales the majority would be designated as school based, yet in both States the counsellors are performing what is essentially the same function. It is therefore important, when examining the comparative personnel tables that are provided in the next section to take full cognizance of the definitions of particular personnel categories that are indicated in the footnotes to the tables.

Because of their numerical and functional importance, it is the definition of teaching staff which requires the most careful attention. In the tables which follow the definition of teachers which is employed is that adopted by the Australian Bureau of Statistics, namely that the term 'teacher' includes

> . . . teaching staff, principals and head teachers, (whether permanent or temporary), but excludes teachers-in-training, teachers on leave without pay, and teachers engaged wholly in advisory, administrative, or other non-teaching duties. (ABS, Schools Australia 1979 Cat. No. 4202.0)

At the level of the school the application of this definition involves distinguishing teaching personnel from non-teaching personnel. Ainley (1982) lists three identifying criteria for teachers: the salary award under which they are employed; their professional training; and their intended role in schools. In government schools these criteria would closely coincide. Accordingly we would include as a teacher, a principal or a teacher librarian even though neither had any direct class responsibilities, because such staff meet the criteria outlined above. Personnel classified as teachers under these criteria could be used for class teaching. For those school personnel who do not meet the criteria outlined above, this option could not (legally) be exercised.

Personnel Numbers

Between them the eight government school systems employed the full-time equivalent of more than 200,000 personnel in 1979. The largest single category of these were school-based teachers, who comprised just over 80 per cent of the total personnel employed in the government education systems. These data account for the fact that in government budgets, education is generally one of the largest single expenditure categories, and 'teachers salaries' is normally the most significant line entry in education budgets.

The functional and locational distributions of personnel employed in the seven Australian government education systems are shown in Table 4.1. New Zealand is not included in the table because at the time of writing comparable data were not available for that system. The personnel in each of the locational and functional categories in Table 4.1 are expressed as the number of personnel per 1000 students. This method of presentation facilitates the description of broad patterns of personnel deployment. Before commencing the descriptive task, it is necessary to draw attention to several characteristics of Table 4.1. First, the definitions that have been used to determine particular personnel categories are provided in the footnotes to the table, and care should be exercised in the making of comparative statements on the basis of Table 4.1 because of some difficulties associated with the data from which the table was derived. For example, systems vary in the definition of some personnel categories, particularly in the case of non-school-based staff. The second aspect of the data base for Table 4.1 that is worthy of attention is the exclusion from the school-based personnel category of the numbers of groundsmen, janitors, cleaners and similar ancillary staff located in schools. These groups were excluded because the use of contract cleaning services in a number of systems makes an estimate of the numbers of such individuals difficult. Furthermore, as argued by Hancock (1980) there is at best a tenuous relation between these ancillary staff categories and the educational programs of schools.

Table 4.1 Numbers of Personnel Employed by Government Education Systems per 1000 Students, Australia August 1979[a]

	School-based[b]				Non-school-based				Total personnel per 1000 students
	Teaching staff[c]	Instruct. ancillary staff[d]	Clerical ancillary staff[e]	Total school-based	Executive staff[f]	Seconded teachers[g]	Prof. staff[h]	Ancillary staff	
Australian Capital Territory	63.5	7.4	3.7	74.6	0.2	2.1	0.7	3.3	80.9
New South Wales	57.3	3.7	3.8	64.9	0.3	0.3	0.4	1.6	67.5
Victoria	66.4	3.3	2.7	72.4	0.3	2.0	0.9	n.a.[j]	75.6
Queensland	55.8	6.9	2.6	65.3	0.3	0.6	0.8	1.7	68.7
South Australia	65.0	—10.6—		75.6	0.5	1.9	1.1	2.2	81.3
Western Australia	55.5	4.5	3.2	63.2	0.4	2.5	0.6	2.9	69.6
Tasmania	65.0	5.8	3.6	74.4	0.7	-	5.1	3.0	85.0

Sources: ABS, Schools Australia. Cat. No. 4202.0; Schools Commission, Statistical Bulletin; System Level Reports; Annual Reports of the Departments of Education.

[a] Excludes pre-school personnel.

[b] Excludes janitors, cleaners and groundsmen.

[c] These data accord with the definition of teaching staff used by the ABS in Schools Australia 1979 and as such include '... teaching staff, principals and head teachers, (whether permanent or temporary), but exclude teachers-in-training, teachers on leave without pay, and other teachers engaged wholly in advisory, administrative, or other non-teaching duties' (ibid).

[d] Includes teacher aides, laboratory assistants and library assistants.

[e] Includes clerks, typists, bursars and administrative assistants.

[f] Defined as those on a salary award greater than that of the higest paid school principal in the system.

[g] Defined as those employed under teacher salary awards.

[h] Defined as professional staff under awards other than general teacher awards.

[j] These figures were not published prior to 1980.

Notwithstanding the gross nature of the data in Table 4.1, it does reveal some interesting differences between the systems in the distribution of their personnel. For example, the proportion of total personnel included in the table who are school based ranges from 87.5 per cent in Tasmania through to 96.1 per cent in New South Wales. In general it appears that the larger the education system (as reflected in enrolments) the higher the proportion of total personnel who are school based. This conclusion is reinforced when one examines the proportion of total personnel included in the table who can be classified as school-based teaching staff. As can be calculated from Table 4.1, this proportion ranges from 76.5 per cent in Tasmania to 84.9 per cent in New South Wales and 87.8 per cent in Victoria. Overall, the data reveal a positive relationship between the size of an education system and the proportion of total personnel who are located in schools.

The relation between the proportion of school-based staff and system size revealed by Table 4.1 leads to two interpretations. First, it would appear that a certain number of non-school-based personnel are necessary to manage and service an education system, regardless of the size of that system. Secondly, the size of this administrative overhead does not seem to be directly proportional to the size of the education system. For example, of the seven Australian government systems, the smallest system, the ACT, had some 245 non-school-based staff in 1979 to manage and service just under 40,000 students whereas the largest, New South Wales, employed 2100 non-school-based staff for a total enrolment of over 800,000 students. In other words, although the enrolment in New South Wales was more than 20 times that of the ACT, the number of non-school-based personnel was less than eight times that applying in the ACT. Despite the different geographical spread of schools in the systems and the different level of services provided to schools in the systems, the data in Table 4.1 support the hypothesis, advanced in Chapter 2, that a large number of relatively small administrative units may necessitate a higher proportion of personnel being involved in non-school-based duties than would occur with a small number of large units.

The relationship between system size and the functional distribution of personnel can also be usefully approached via an analysis of the functional classification of system operating costs. This task was undertaken by the Commonwealth Schools Commission for the 1978-79 financial year (Commonwealth Schools Commission, 1981a) and involved a detailed dissection of the financial records of the Australian government school systems, excluding Queensland. Summary data from the analysis are provided in Table 4.2, which shows quite clearly the inverse relationship between system size and the per student costs of general administration. The two smallest systems shown in that table, the ACT and Tasmania, incurred general administration costs significantly higher than for the larger systems. The corollory of this factor is that it is the larger systems such as New South Wales and Victoria which are able to direct a proportionately higher share

Table 4.2 Public Expenditure Per Student, Australian Government School Systems (except Queensland), 1978-79

System	School costs $	Educational services $	General administration $	Total $	School costs as proportion of total %
Australian Capital Territory	1391	47	97	1535	90.6
New South Wales	1059	33	42	1135	93.3
Victoria	1268	43	42	1353	93.7
South Australia	1265	57	45	1366	92.6
Western Australia	1161	80	48	1289	90.0
Tasmania	1192	74	75	1341	88.9

Source: Commonwealth Schools Commission (1981a)

of their resources to the direct provision of resources in schools; these data are shown in the final column of Table 4.2.

In a similar vein to this argument, Monk (1982) hypothesized that as the scale of a school system decreases because of, for example, declining enrolments, the mix of services which the schools are able to provide may be adversely affected, since a higher proportion of total resources could need to be allocated to managing and co-ordinating the system. As he comments, such changes may have important equity implications for the supply of educational resources to particular types and locations of students.

Table 4.1 indicates quite clearly the different levels of personnel provision in the seven Australian government systems. At the school-based level for example, the number of teaching staff per 1000 students ranges from 55.5 in Western Australia to 66.4 in Victoria, with a median value of 63.5 for the ACT. In terms of student-teacher ratios this difference is equivalent to a range between 18.0 students per teacher in Western Australia to 15.1 in Victoria. Differences between the systems are also apparent in terms of the number of ancillary support staff based in schools. On the basis of Table 4.1, the number of ancillary staff per 1000 students ranged from 6.0 in Victoria to 11.1 in the Australian Capital Territory.

At the aggregate system level, Table 4.1 reveals a complex relationship between the numbers of school-based teaching staff and the numbers of school-based ancillary support staff. Victoria for example, appears to have the highest number of school-based teachers per 1000 students, and the lowest number of ancillary support staff per 1000 students. Queensland, on the other hand, has a relatively low number of teachers but a relatively high number of ancillary support staff per 1000 students. Systems such as the Australian Capital Territory, South Australia and Tasmania, appear to have relatively high numbers in both staff categories. As a reference point, it was recommended in 1971 (South Australia, 1971) that an appropriate target level for ancillary staff would be 40 per cent of teacher numbers in schools. As yet, none of the education systems have got near to this objective.

On the basis of these aggregate relationships between the numbers of teachers and the numbers of ancillary staff located in schools, it is possible to detect two broad approaches in the supply of staff to schools. Some systems appear to view the supply of teachers and ancillary staff as complementary to each other: a relatively high level of staffing in one category is associated with a relatively large number of staff in the other. In other systems, the converse appears to apply: a relatively high level of teaching staff is asociated with a relatively low number of ancillary support staff, or vice versa. It needs to be emphasized that the relation between staff categories that has just been elaborated is based upon aggregated data at the level of the education system. At the level of the school, the staffing schedules employed by all systems ensure that the higher the number of teachers allocated to a school, the higher the number of ancillary staff that will also be allocated. In this sense, the staffing schedules presume that teachers and ancillary staff are proportionately related.

System-level decisions about the appropriate configuration of teaching and ancillary support staff are shaped by the relative financial costs of the different personnel categories, and assessments of the relative educational benefits of different combinations of teaching and support staff. Unfortunately there has been little research conducted which can help to inform these assessments. The only study of significance in this field was conducted by Conant (1973) and involved an investigation of the relative cost-effectiveness of different configurations of teachers and support staff in the primary schools of Portland, Oregon. Starting with the premise that the amount of teacher instructional time per student was a key variable in determining the effectiveness of student learning, Conant attempted through classroom observation to determine whether the existence of teacher aides in a school increased the instructional time per student. He found that while some increase was observable in classrooms with teacher aides, in general, such increases were not statistically significant. Furthermore, the increases were at the cost of additional expenditure for the teacher aides, and also at the cost of greater supervisory time on behalf of the teachers with teacher aides in their classrooms. For all its methodological value, the Conant study was therefore unable to answer the basic question of whether it was cost-effective to alter the configuration of teachers and teacher aides.

In terms of deciding the most appropriate configuration of teachers and support staff, schools themselves can play a significant role. There is evidence to suggest that even within the one system, schools differ considerably in the configuration of staff which they consider most appropriate to their needs. This evidence comes from the survey of school resource allocation policies reported in the companion volume (Ainley, 1982). As part of that survey, school principals were posed a hypothetical question concerning the school's preferences for the allocation of an additional expenditure grant amongst various categories of teaching and support staff. While many schools indicated a preference for additional specialist teaching staff and instructional and clerical support staff rather than for categories such as senior teaching staff, general purpose teachers and technicans, there was considerable diversity between schools in the preferences they expressed. Accordingly, centralized decisions to alter the configuration of staff in schools, if taken without adequate consultation with the schools, are unlikely to closely accord with school assessments of their needs.

Returning to the system-wide configurations of personnel shown in Table 4.1, it is apparent that only limited potential exists for significantly altering the balance of staff, at least in the short term. For example, each system employs a number of non-school-based personnel who are, in the main seconded teachers, and in addition, it is possible that some of the non-school-based professional staff also possess teaching qualifications. The fact that these personnel are located out of schools could generate calls for their relocation to school teaching functions on the grounds that this is where their capacities could be most effectively deployed. Whatever the merits of this argument, it is important to note that on the basis of the limited numbers of such personnel revealed in Table 4.1, the effects of such transfers upon the staffing levels in schools would be relatively small. To illustrate, it would appear that Western Australia has the highest number of seconded teachers per 1000 students. However, if all of these staff were relocated in schools this would lead to only a 4.5 per cent increase in the number of school-based teachers; in student-teacher ratio terms this would be equivalent to a decrease from of 18.0 to 17.3 students per teacher. Smaller gains would be likely in other systems which adopted such policies. Whether such gains were significant would have to be judged against the loss of the services provided by the seconded teachers, as well as the loss of the professional development and enhancement of teacher satisfaction which, it has been argued (South Australia, 1981), may flow from a period of secondment.

The remainder of this chapter is concerned with a discussion of school-based teaching staff, the largest single component of personnel in each of the government education systems.

Teachers in the Government Education Systems

Changes Over the Past Decade

It is of interest to examine the recent changes in the number of students in the schools of the eight education systems together with the growth in the number of teachers that has taken place over the past decade. In Table 4.3 information has been recorded about the number of students in government primary and secondary schools for the years 1972

Table 4.3 Enrolments in Government Primary and Secondary Schools. Australia and New Zealand, 1972 to 1981 (in thousands)

	ACT	NSW	Vic.	Qld	SA	WA	Tas.	NZ[b]
Primary Schools[a]								
1972	18.8	502.1	373.3	215.4	154.9	127.7	44.7	469.8
1973	19.9	494.8	373.4	220.4	152.7	127.6	43.8	471.2
1974	21.0	490.7	375.7	222.1	152.9	129.5	44.5	473.1
1975	22.4	490.6	378.2	223.7	152.0	132.2	44.3	474.6
1976	23.9	496.1	382.5	227.2	151.5	134.8	44.4	475.1
1977	24.7	506.6	386.7	233.3	152.1	139.5	44.6	473.6
1978	25.3	512.7	386.9	239.0	150.0	142.2	44.9	472.1
1979	24.8	516.7	381.7	243.8	146.8	142.1	44.9	468.7
1980	24.8	515.6	374.7	247.4	142.3	141.7	44.8	461.0
1981	24.5	506.9	362.3	251.8	137.9	141.1	43.6	454.9
Secondary Schools								
1972	9.8	277.8	229.3	91.2	77.9	55.8	28.5	167.6
1973	10.5	282.0	232.3	94.3	79.1	57.6	28.9	172.7
1974	11.7	286.9	233.0	98.2	79.6	59.4	29.3	177.6
1975	12.8	298.3	239.9	103.8	82.7	62.8	30.0	188.0
1976	13.7	303.6	242.2	107.1	82.1	64.7	30.2	197.9
1977	14.2	303.4	239.7	108.0	81.1	65.6	29.6	199.7
1978	14.5	299.4	236.7	106.9	80.5	65.5	28.8	202.8
1979	14.5	291.1	232.7	105.3	77.7	[illegible]4.9	28.2	198.1
1980	14.5	283.7	231.5	106.1	76.4	64.9	27.5	195.1
1981	14.7	283.5	232.8	108.7	75.1	66.0	27.3	196.9

Sources: ABS, Schools Australia. Cat. No. 4202.0; Schools Commission (1979); New Zealand Official Year Book.

[a] Unless otherwise classified, students in special schools are included in the primary sector. Pre-primary enrolments in centres attached to primary schools are excluded.

[b] Primary enrolments include Forms 1 and 2 at Form 1 to 7, area and district schools.

to 1981. In three systems only, Queensland, Western Australia and the Australian Capital Territory, has there been significant growth at both the primary and secondary levels. In the remaining five systems, there has been some fluctuation in enrolments at the primary school level or at most only a slight increase; at the secondary school level, following increases in the early 1970s, enrolments have been relatively static or in slight decline over the past three years.

The number of school-based teachers in each of the systems over the period 1973 to 1981 has been recorded in Table 4.4. Because of the differences between the systems in the definition of some categories of teachers, Table 4.4 is of limited validity for making inter-system comparisons. It is of most value in tracing changes in teacher numbers in individual systems over the period. Even within this limited purpose however, some difficulties may arise. For example, although the ABS data used in Table 4.4 show a decline in teacher numbers in New South Wales between 1979 and 1981, the actual number of teaching positions increased over the same period. The difference between

Table 4.4 Numbers of Primary and Secondary Teachers (Full-time Equivalents) in Government Schools in Australia and New Zealand, 1973 to 1981

	ACT	NSW	Vic.	Qld	SA	WA	Tas.[a]	NZ[b]
Primary School Teachers								
1973	731	19469	15222	8560	6100	4443	1857	18366
1974	965	19916	15466	9157	6428	4765	1930	18915
1975	1120	20877	17116	10359	6690	5446	2158	19874
1976	1170	21440	18459	10976	6966	5676	2079	19826
1977	1237	22502	19271	11400	7605	5898	2251	19455
1978	1270	22456	19912	11436	7967	6304	2325	19329
1979	1250	23720	20023	11868	8041	6539	2433	19284
1980	1273	23359	19996	11934	8057	6666	2502	19531
1981	1247	22930	20024	12051	7918	6568	2480	19350
Secondary School Teachers								
1973	592	17364	16353	5642	5312	3821	1940	9939
1974	885	18279	16648	6035	5854	4012	2008	10368
1975	1054	19815	18148	6824	6268	4371	2092	11474
1976	1142	20933	19152	7186	6461	4571	2162	12244
1977	1204	22016	20002	7510	6520	4735	2159	12620
1978	1245	22004	20645	7453	6508	4897	2259	12860
1979	1247	22523	20756	7613	6562	4956	2318	13352
1980	1250	22604	20596	7578	6571	5002	2406	13357
1981	1253	22318	20438	7668	6554	5123	2467	13444

Sources: ABS, *Schools Australia.* Cat. No. 4202.0; *Annual Report of the New Zealand Department of Education.*

[a] For the years up to and including 1978 the teacher numbers for Tasmania include teachers engaged in pre-school activities under the administration of government schools.

[b] Manual training assistants and area school teachers are included in the secondary teacher numbers.

the two measures can be partly explained by the absorption of reserves into established positions and the exclusion of casual relief teachers from the ABS data.

It is evident that, as defined in the table, school-based teacher numbers in both the primary and secondary sectors of all systems grew considerably from 1973 to 1977. However, there has been a levelling off and even slight falls in teacher numbers in some systems since 1978. Over the whole decade however, teacher numbers have grown relative to student numbers, with the net result that student-teacher ratios declined in all systems over the period 1972 to 1981. The student-teacher ratio data are recorded in Table 4.5. In all systems the falls in the student-teacher ratios over the 1970s are considerable although in recent years the rate of decline has fallen. While student-teacher ratios do not necessarily reveal the actual sizes of class groups in the classroom setting, the changes do indicate an improvement in the conditions for student learning through providing students with greater opportunities for individual assistance, as well as facilitating more preparation time for teachers.

Table 4.5 Student Teacher Ratios in Government Schools in Australia and New Zealand, 1972 to 1981

	ACT	NSW	Vic.	Qld	SA	WA	Tas.	NZ
Primary Schools								
1972	28.1	25.3	24.6	26.0	25.9	30.0	25.9	..
1973	26.9	25.4	23.7	25.8	24.3	28.7	25.2	25.7
1974	21.7	24.6	23.4	24.2	23.0	27.2	24.1	25.0
1975	20.0	23.5	22.1	21.6	22.7	24.3	22.8	23.9
1976	20.4	23.1	20.7	20.7	21.7	23.8	23.8	24.0
1977	20.0	22.5	20.1	20.5	20.0	23.7	21.2	24.3
1978	19.9	22.8	19.4	20.9	18.8	22.6	21.6	24.4
1979	19.9	21.8	19.1	20.5	18.3	21.7	18.4	24.3
1980	19.5	22.1	18.7	20.7	17.7	21.3	17.9	23.6
1981	19.6	22.1	18.1	20.9	17.4	21.5	17.5	23.5
Secondary Schools								
1972	17.4	16.6	15.3	17.6	16.3	15.9	15.3	..
1973	17.8	16.2	14.2	16.7	14.9	15.1	14.9	17.4
1974	13.2	15.7	14.0	16.3	13.6	14.8	14.6	17.1
1975	12.1	15.1	13.2	15.2	13.2	14.4	14.4	16.4
1976	12.0	14.5	12.6	14.9	12.7	14.2	14.0	16.2
1977	11.8	[illegible]	12.0	14.4	12.4	13.8	13.7	15.8
1978	11.6	13.6	11.5	14.3	12.4	13.4	12.8	15.8
1979	11.6	12.9	11.2	13.8	11.8	13.1	12.2	14.8
1980	11.6	12.6	11.2	14.0	11.6	13.0	11.4	14.6
1981	11.7	12.7	11.4	14.2	11.5	12.9	11.1	14.6

Source: Tables 4.3 and 4.4.

Table 4.6 Indices of Recurrent Resource Expenditure in Government Schools of the Australian State Systems in Relation to Schools Commission Targets for Years 1972, 1976 and 1979

	Primary				Secondary			
State	1972	1976	1979	Target 100	1972	1976	1979	Target 100
NSW	99	126	144	103	95	116	138	102
Vic.	101	143	167	119	100	142	159	118
Qld	100	143	160	114	99	116	127	94
SA	102	142	181	129	106	145	161	119
WA	97	138	160	114	113	141	158	117
Tas.	103	152	162	116	109	133	159	118
Total	100	137	158	113	100	129	147	109

Sources: Schools Commission. Report for the Triennium 1979-81. Canberra: AGPS, 1978, p.29.
Commonwealth Department of Education. Progress in Education 1980-81. Canberra: 1980.

The improved student-teacher ratios over the 1970s are reflected in the achievement of Schools Commission targets in the six Australian State education systems. The Schools Commission when it was established in 1973 set target levels for expenditure on recurrent resources by schools, which involved in the main, expenditure on teachers. In Table 4.6, indices which have been derived from information published by the Commonwealth Department of Education and the Schools Commission are presented. For the years 1972, 1976 and 1979 the indices are calculated with respect to the average Australian figure for 1972, and show the changes in levels of expenditure on recurrent resources since that time. In 1973, the Schools Commission set target levels for adjusted recurrent expenditure indices of 140 for primary and 135 for secondary schools to be achieved by 1979. The degree to which each system has achieved or exceeded these target levels is also recorded in Table 4.6. The increase in expenditure since 1972 on recurrent resources in all systems has been marked, indicating approximately a 50 per cent increase in real recurrent expenditure across Australia at both levels. Furthermore, the indices which show relativity with respect to the target levels set by the Schools Commission indicate that the systems have, in general, exceeded the levels set for improvement in the services provided for education in the Australian States.

In Australia, the increase in government expenditure on education during the 1970s was financed through increases in the real value of the Gross Domestic Product (GDP) over that period, and through an increase, until recently, in the share of the GDP being devoted to education. Between the years 1973-74 and 1979-80, real GDP in Australia grew at an average annual rate of 2.9 per cent (Australia. Treasury, 1980), and of this increasing pool of resources the education sector (excluding expenditure on student allowances) increased its share from 3.89 per cent of GDP in 1972-73 to a peak of 5.43 per cent of GDP in 1977-78 (Karmel, 1981). These macro-economic trends in Australia translated at the level of the schools to a real increase of 54.0 per cent in recurrent expenditure per student in government primary schools between 1972-73 and 1978-79, and an equivalent increase of 43.4 per cent per government secondary student over the same period (Schools Commission, 1981b).

Relative to Australia, economic growth in New Zealand over the 1970s was low. In the period between 1973 and 1978, real GDP grew at an average annual rate of only 0.34 per cent (New Zealand, Official Year Book, 1980), and for several years in the mid-seventies real GDP actually declined from one year to the next. Hence, although the proportion of GDP devoted to education in New Zealand rose slightly from 4.8 per cent in 1973 to 5.3 per cent in 1978, this reflected a rising share of resources which were themselves increasing only very slightly. The net result was that the increase in real education expenditure in New Zealand over the period 1973 to 1979 was only some 14 per cent, which is significantly below the comparable Australian figure. It is therefore not unexpected that the decline in student-teacher ratios shown in Table 4.5 was less marked in New Zealand over the 1970s than in Australia over the same period.

Projected Enrolment Changes During the 1980s

Predicting enrolments in government schools is a difficult task. Not only does it require accurate predictions of demographic patterns it is also necessary to estimate the likely pattern of enrolments between non-government and government schools, and the likely retention rates to the upper secondary years. The major difficulties facing planners predicting government school enrolments, the major estimation techniques that may be employed, and the particular problems of the Australian data base are discussed in detail by Burke et al. (1981).

Tables 4.7(a) and (b) contain the most recent official projections to 1990 of enrolments in the Australian government school systems, and the size of the New Zealand school age population respectively. Between them the two tables indicate a considerable decline in student numbers by 1990. Of the eight school systems, only for the ACT, Queensland and Western Australia is it projected that there will be more students enrolled in 1990 than there were in 1980. Across the whole of Australia, government school enrolments are projected to have declined 8 per cent by 1990. In New Zealand the projected decline in aggregate student numbers is 13 per cent between 1981 and 1990. In several of the Australian systems namely Victoria, South Australia and Tasmania total enrolments are projected to decline by about 15 per cent from their 1980 levels by 1990.

Across all systems, even those in which total enrolments are projected to grow, it is the primary sector of education in which the projected decline in student numbers is most marked. With the exception of the ACT, Tasmania and New Zealand, the general patterns of projection is for primary enrolments to decline significantly between 1980 and 1985 and then to recover slightly by the end of the decade. In these three systems, and particularly so in New Zealand, the projections indicate the continuation of the decline in primary school enrolments until at least 1990. Within the general pattern of a projected decline in primary school enrolments, there is considerable variation between the systems in the extent of the decline. For example, in the relatively high population growth States of Queensland and Western Australia, by 1990 primary enrolments are projected to be at about the same level as in 1980. By contrast, in South Australia, the projections indicate a decline of about 17 per cent in primary enrolments by 1990; in Victoria, Tasmania and New Zealand the prospects for government primary school enrolments are only marginally better over the same period.

Table 4.7(a) Projected Enrolment by Government School System and Sector Australia 1980 to 1990

System		1980 enrolments (000's)	Projections (1980 = 100) 1980	1985	1990[a]
Australian Capital Territory	Primary	24.8	100	96.8	94.0
	Secondary	14.5	100	113.8	117.9
	Total	39.3	100	103.1	103.1
New South Wales	Primary	515.6	100	87.3	88.0
	Secondary	283.7	100	105.5	95.9
	Total	799.3	100	93.8	90.6
Victoria	Primary	374.7	100	82.4	83.1
	Secondary	231.5	100	102.4	89.8
	Total	606.2	100	90.0	85.4
Queensland	Primary	247.4	100	98.9	99.5
	Secondary	106.1	100	123.9	123.4
	Total	353.5	100	106.5	106.5
South Australia	Primary	142.3	100	82.4	82.6
	Secondary	76.4	100	96.9	84.8
	Total	218.7	100	87.4	83.2
Western Australia	Primary	141.7	100	94.4	99.3
	Secondary	64.9	100	113.4	108.0
	Total	206.6	100	100.3	101.8
Tasmania	Primary	44.8	100	85.0	84.8
	Secondary	27.5	100	100.7	86.2
	Total	72.3	100	91.0	85.0
Australia (incl. NT)	Primary	1508.0	100	88.5	89.4
	Secondary	810.0	100	107.0	97.9
	Total	2318.0	100	94.9	92.1

Source: Commonwealth Department of Education (1982).

[a] To devise the 1990 projected enrolments, the proportion of enrolments in government schools projected for 1986 was also assumed to apply in 1990.

Table 4.7(b) Projected Population by Selected Age Groups, New Zealand 1981 to 1990

Age group (years)	1981 (000's)	Projections (1981 = 100)[c] 1981	1985	1990
5-12[a]	471	100	90.7	84.8
13-18[b]	368	100	99.4	92.3
Total (5-18)	839	100	93.6	87.3

Source: New Zealand. Department of Statistics, 1981.

[a] The 5-12 age group corresponds to primary students.

[b] The 13-18 age group corresponds to the normal years of secondary education; in 1981, secondary enrolments were approximately 61 per cent of the 13-18 age group.

[c] The projections assume median fertility and from 1984, zero net migration.

The general decline in government primary school enrolments between 1980 and 1985 is largely responsible for the decline in secondary school enrolments projected to occur between 1985 and 1990. With the exception of South Australia and to a lesser extent New Zealand, this decline over the latter half of the eighties is expected to follow a period of growth in secondary enrolments up until about 1985. However, the growth in government secondary school enrolments is projected to vary markedly between systems. In Queensland for example, it is projected that government school enrolments will increase by 24 per cent between 1980 and 1985, in the ACT and Western Australia by about 13 per cent, a more modest 6 per cent in New South Wales, while only marginal growth is projected for Victoria and Tasmania. These variations underline the importance of avoiding generalizations when talking about the problems associated with changing patterns of enrolments.

Such variations take on a further dimension when intra-system variations in enrolment changes are also considered. The demographic composition of urban areas and regions is such that changes in the number of enrolments are likely to vary markedly between different areas within systems and even between schools in the same area. New Zealand provides but one example of such intra-system variation in enrolment patterns. Recent projections by the New Zealand Department of Statistics (1981) suggest that enrolment decline is likely to be more severe in the South Island than on the North Island, and that while for the 1990s there is a projected enrolment growth in the North, a continued decline is projected for the South. Such intra-system variation in enrolment changes poses considerable problems for the management of educational facilities and the effective utilization of staff. Some of these issues are taken up later in this chapter.

Before leaving this descriptive material on enrolment projections, it is important to note that enrolment projections are generally based upon the continuation of recently observed trends and as such are subject to considerable uncertainties. Changes in key variables such as birth rates, immigration and retention rates can all, even over a comparatively short period, render enrolment projections obsolete. An illustration of this is provided by Table 4.7(a) which was prepared from projections published by the Commonwealth Department of Education in March 1982. These projections replaced those published two years earlier and compared with these, the later set of projections revised the projected 1990 enrolments in Australian primary school downwards by 1.8 per cent, secondary enrolments upwards by 5.6 per cent, and total enrolments upwards by one per cent. Such uncertainty in enrolment projections necessitates the constant monitoring of factors likely to affect enrolments. It also implies that it may be unwise to become locked into policies framed in response to projected enrolment changes when the projections themselves are subject to considerable uncertainty.

The improvements in the student-teacher ratios in each of the eight government education systems over the period 1972 to 1980 that were recorded in Table 4.5, and the concomitant achievement of Schools Commission resource targets by the six Australian State government systems that were recorded in Table 4.6, have coincided with calls to limit education expenditure by governments, particularly in the field of teacher employment. Such calls have been buttressed on the one hand by predictions of declining student numbers in some government systems, and on the other by criticisms of achievement levels in government schools. The first of these supporting arguments is predicated upon the view that declining student numbers diminish the share of the community's resources to which education is entitled, while the second is based upon the proposition that the additional resources which have flowed to education over the past decade have not improved the performance of schools, and that therefore any future increase in resource levels cannot be justified. Each of these arguments will be addressed in turn.

Enrolment Changes and Resource Levels

As noted in the previous section, predictions of declining government school enrolments in the decade to 1990 are not generalizable to all sectors in all systems. However, if enrolments in a given system are likely to decline over the next few years, is this of itself sufficient reason to decrease expenditure on schools in that system? Before addressing this question it is necessary to clarify the units of expenditure that are involved. At the simplest level there are two major ways in which the annual level of government expenditure upon schools can be viewed: as a proportion of GDP, and as expenditure per student. If GDP is increasing in conjunction with declining enrolment levels and constant real education expenditure per student, the overall share of GDP devoted to education will fall. Indeed, the combination of declining enrolments with rising GDP means that:

> . . . it will be possible to increase real spending on education without increasing the proportion of the gross domestic product devoted to education. (Karmel, 1981:31)

In a situation where school enrolments are declining, an increase in real expenditure on schools is equivalent to an increase in real expenditure per student. In sum, the combination of a growing economy and a declining school population can enable government expenditure per student to be maintained or even increased while at the same time not increasing the share of the community's resources devoted to education. However, in Australia, while increases in real GDP may enhance the capacity of the community to fund government schools, the primary role of the Commonwealth government in the collection and disbursement of public funds, means that the claims of the schools will be balanced against the Commonwealth's overall public expenditure policy and the competing claims of other sectors.

As was shown in Tables 4.7(a) and (b), it was only in a small number of sectors that government school enrolments were projected to be higher in 1990 than in 1980. Overall therefore, the opportunity offered by declining enrolments for increasing or even maintaining real per student expenditure is not available in equal magnitude to all sectors in all systems.

It is important to note that even where declining enrolments and rising economic growth rates provide the opportunity to increase per student expenditure without increasing the share of GDP allocated to education, structural factors may limit the resource gains to be reaped. For example, if the combination of declining enrolments and a decline in teacher resignation rates leads to an increase in the average age of the teaching force, an increase in expenditure upon teacher salaries may be necessary even though total teacher numbers may not have increased. This process, known as incremental creep, can necessitate an increase in per student expenditure which does not necessarily translate into additional resources per student. In addition to the incremental creep process, which may be expected to continue until teachers reach the top of their respective salary scales, an ageing of the teaching force may also be expected to increase system expenditure on long-service leave and superannuation payments. As with incremental creep, such expenditure does not necessarily increase the level of educational resources per student.

A further structural factor that is associated with declining enrolments, and which may also have considerable cost implications, concerns the pattern of enrolment change between schools. Enrolment increases across a system have never been spread evenly amongst schools and there is little reason to suppose that in a period of declining enrolments the situation would be any different. In the case of Victoria for example, it has been estimated (Hunt, 1979) that government primary school enrolments in certain inner suburban areas may decline by as much as 50 per cent over the period 1980 to 1984, in other suburban areas by between 10 and 30 per cent, and in a number of other suburban locations by less than 5 per cent. Over the same period however, primary school enrolments in several localities on the fringe of the metropolitan area are projected to increase by up to 30 per cent. Such an uneven pattern of enrolment change puts pressure on education budgets because it is still necessary to provide additional buildings and equipment in the expanding areas, while at the same time it may prove difficult to dispose of under-utilized facilities in locations where enrolments are contracting. If a general process of enrolment decline leads to a decrease in the average size of schools, per student recurrent expenditure may increase because, as is shown in Chapter 6, small schools tend to have higher per student operating costs than do larger schools in the same system. In a similar vein, if the overall decline in system enrolments is accompanied by a rise in the proportion of students enrolled in the upper secondary years, total per student costs will tend to rise because secondary schools allocate proportionately more personnel resources to those year levels (Ainley, 1982).

In sum, in a period of declining enrolments, structural factors such as the composition of the teaching force, the distribution of students between schools, the average size of schools, and the numbers of upper secondary students, may result in increased operating costs per student. Furthermore, increases in per student operating costs caused by these factors will not always result in an increased level of educational resources per student. Overall therefore, a period of declining enrolments may well necessitate an increase in per student expenditure merely to maintain the status quo in per student resource levels. Whether or not this additional expenditure need involve a higher share of the community's resources is dependent upon growth rates in real GDP. If the relatively high growth rates in real GDP experienced in Australia in the two years to 1981 could be maintained during the 1980s, it would be possible, in a period of declining enrolments, to increase per student expenditure without increasing the share of GDP devoted to schools. However, if GDP growth rates remain at the level experienced over 1982 such an outcome would not be possible. In the Australian context, the likelihood of increased per student expenditure will be heavily dependent upon the taxation and expenditure policies of the Commonwealth government. In the case of New Zealand, the short-term outlook is more pessimistic than in Australia. If a sustained economic recovery does not eventuate in New Zealand, in the absence of policies to counter those structural factors which may be expected to increase per student costs, it will also be difficult to achieve an increase in per student resource levels without increasing the proportion of GDP devoted to the schools.

School Resource Levels and Student Outcomes

Policy decisions concerned with the level of expenditure upon schools are influenced by assessments of the effects of additional resources upon student outcomes. At the conceptual level, the resolution of this issue necessitates determining the proportion of variance in student outcomes which is attributable to variance in school resources after having controlled for the effects of other relevant variables. The attempt to answer this question has spawned a large number of studies, particularly in the United States. An excellent review of this literature is provided by Hanushek (1977). As a group they are generally known as educational production function studies, and in general such studies have involved the following steps.

1 Measurement of student performance on a standardized achievement test.

2 Conceptualization and measurement of those input factors likely to influence student performance such as home background variables, school-based resources, and peer group characteristics.

3 Specification of student performance as a linear function of the measured input factors.

4 Performance of multiple regression analysis in order to ascertain the relative contribution of each input factor in explaining differences in student performance.

At a more sophisticated level, an additional step in the analysis has been to take the regression coefficients of the school-based resources as representing the marginal productivity of those inputs, and then to apply the relative prices of the inputs in order to ascertain the most efficient combination of inputs (Levin, 1974).

The general findings of such studies have been interpreted as suggesting that school resources play a relatively minor part in accounting for variations in student performance, and that the principle explanation for such variations is to be found in home background. A number of reasons have been advanced for these findings including methodological difficulties in the specification of the outputs of schooling, problems in the measurement of the inputs influencing learning, limited knowledge about school processes, and the lack of data disaggregated to the level of the individual student (Summers and Wolfe, 1977; Brown and Saks, 1978). An even more significant criticism of such studies may be that they are based on a false premise, namely that schools are attempting to maximize a single output (or number of outputs), when in practice the structural characteristics of schools and the lack of knowledge about the interaction between school resources and student performance, mean that observations of schools are not likely to indicate the most efficient resource allocation policies which are possible (Levin, 1974).

Furthermore, in an activity as diverse as schooling, there is a particular danger in focusing upon one outcome of schooling to the exclusion of all the other possible effects of schools upon students. The risk is that schools may vary significantly in the priority given to the outcome under consideration (Levin, 1970). Accordingly, if one selects a sample of schools and examines the differential effects of resources within those schools upon the achievement of the designated outcome, it is probable that the analysis will discover the average means of achieving the outcome whereas what would be required for policy purposes would be the maximum technically possible means (Levin, 1974). The conventional method of overcoming this problem is to assume that all other outcomes of schooling are produced in fixed proportion to the outcome under consideration (Brown and Saks, 1978). This would appear to be a questionable assumption in the case of such diverse an undertaking as schooling. Yet, as noted in the review by Hanushek (1977), most production function studies implicitly make this assumption because of their use of a single, rather low level, cognitive achievement measure.

It has also been argued (Centra and Potter, 1980) that the general finding of the production function studies, namely that differences in school resources account for little of the variance in student achievement, is not equivalent to denying the value of schools. Rather, they argue that strictly speaking, this finding should only be taken to mean that variations in the school resources used in particular studies do not account for a significant proportion of the particular outcome variable(s) employed in the studies, after controlling for the socio-economic status of students.

The above criticisms also apply in the main to one of the most prolific areas of school resources research, namely studies to determine the effect of variations in class size upon student achievement. The large volume of studies of class size effects has been a fertile ground for reviews of the research literature. Not untypical of the conclusions reached by these reviews are those generated by the Lafleur, Sumner and Witton (1975) and World Bank (1978). After reviewing 40 studies conducted during the 1960s and 1970s, the World Bank Study concluded that this considerable literature:

> . . . does not warrant any definitive conclusion regarding the relationship between class size and different variables in the educational processes . . . it cannot be concluded that an increase in class size will necessarily lead to a decrease in the academic achievement of pupils . . . likewise a decrease in class size does not guarantee an improvement in the social environment of learning. (World Bank, 1978:12)

Lafleur et al. (1975) conducted a more extensive review of the class size literature and were a little less equivocal in their conclusions than the World Bank Study. Following an examination of more than 130 class size studies stretching back to 1902, Lafleur et al. (1975:54) concluded that:

> . . . recent and readily available research on class size has not been conclusive when academic achievement was the criterion . . . however when the criterion was the teaching process and other non-academic achievement, small classes were found to be preferable to large.

The difficulty of reviewers of the class size literature in finding clear relationships was compounded by a lack of agreement on what was meant by 'large' and 'small' classes and the failure of a number of studies to adequately control for the effects of other variables. The apparently contradictory results of many of the studies which examined the relationship between class size and outcomes led to attempts to examine the class size literature in a more systematic manner. The most significant of these were the meta-analyses of studies examining class size and cognitive achievement (Glass and Smith, 1978), and of studies relating class size to student affective outcomes and teacher satisfaction (Smith and Glass, 1979). In essence, meta-analysis is an 'analysis of analyses' which attempts to synthesize the results of research in a particular field by considering the effect size found in each relevant study. As applied to the class size literature, the

110

meta-analysis of class size and cognitive achievement showed an inverse relationship between class size and achievement with the rate of increase in cognitive achievement generally increasing as class size falls (Glass and Smith, 1978). Similar results were reported for the meta-analysis of relations between student affective outcomes and teacher satisfaction (Smith and Glass, 1979).

It would appear therefore, that on the basis of the meta-analyses of the class size literature, a positive response could be given to the question of whether school resources can make a difference to student achievement, at least in terms of those school resources which enable reduced class sizes. This conclusion is not of itself an argument for increased teacher provision in schools to reduce class sizes since the relative cost-effectiveness of such a means of decreasing class sizes has not yet been fully investigated. It could be that other, more cost-effective means of reducing class sizes for particular groups of students could be available. Karmel (1981) recently argued in this vein:

> In schools, class size has become a sacred cow, and pressures for reductions in pupil-teacher ratios have continued in spite of great improvements over the past decade. It may well be that a more effective use of resources would require a trade-off between classroom teachers and special teachers to assist disadvantaged groups or ancillary staff of various kinds, or even a trade-off between primary and secondary teachers. The latest wisdom is that, although very small class size is an effective pedagogic device, small changes in the class sizes which commonly obtain do not produce significant effects (Glass and Smith, 1978). If this is correct, there may be a strong case for allowing the size of most classes to rise a little so that special groups of children may be taught in very small classes. Such a move would certainly conflict with existing educational structures . . . (Karmel, 1981:27).

The suggestions made by Karmel for examining alternative means of lowering the size of some teaching groups for students with special needs without lowering overall student-teacher ratios, may need to be considered by systems in which it is expected that real per student education expenditure is unlikely to rise. It is also the case that in those systems where per student expenditure may increase sufficiently to enable a lowering of student-teacher ratios, there may be merit in examining innovative means of utilizing such additional teaching staff to decrease significantly the size of particular teaching groups, rather than deploying the additional teachers to lower all class sizes by a uniform and small amount. The companion volumes of Ainley (1982) and Sturman (1982) describe resource allocation practices in a number of government schools throughout Australia and New Zealand which involve the innovative use of teachers and other personnel in lowering class sizes for particular teaching groups.

Thus far, the discussion in this chapter has been principally concerned with quantitative aspects of teachers and other educational personnel. The chapter concludes with a discussion of some of the more qualitative characteristics of the teaching force including the distribution of teachers between classifications, the age structure of the teaching service, and aspects of the training and qualifications of teachers.

Table 4.8 Classified Positions of Teachers in Australian Government Education Systems, August 1979[a]

	Sector	Number of teachers (full-time equivalents)	Proportion of teachers classified as the equivalent of[b]			
			principal %	Deputy principal %	Other promotional positions %	Assistant %
Australian Capital Territory	Primary	1202	4.6	8.1	16.6	70.7
	Secondary	1202	1.8	5.3	15.6	77.3
New South Wales	Primary	21470	6.8	4.4	9.5	79.3
	Secondary	21076	1.7	1.7	14.6	82.0
Victoria	Primary	18665	4.1	2.4	24.1	69.3
	Secondary[c]	24691	1.6	1.6	15.3	81.5
Queensland	Primary	10323	10.4	1.2	1.4	87.0
	Secondary	7418	1.8	1.9	13.0	83.3
South Australia	Primary	7896	5.7	7.4	1.2	85.8
	Secondary	6708	1.5	4.0	21.5	73.1
Western Australia	Primary	6049	8.6	8.8	-	82.7
	Secondary	4602	2.8	4.3	13.3	79.6
Tasmania	Primary	2049	8.6	1.5	11.4	78.5
	Secondary	2078	2.7	3.8	20.4	73.1

Sources: System Level Reports and Annual Reports of the Education Departments.

[a] The data refer to those teachers classified as employed in general teaching and school administration. School support teachers such as teacher-librarians and remedial teachers for whom a classification was not available are excluded as are pre-school teachers and (except for the ACT) teachers in special schools. Because of different bases of classification the teacher numbers data are not strictly comparable with those shown in other tables in the chapter.

[b] The equivalent classification positions for each system are given in Appendix II.

[c] Includes teachers in technical schools and classified technical teachers teaching in the TAFE area.

Current Structure of the Teaching Service

Promotion Positions

The number and type of promotion positions available is critical for the successful functioning of any large enterprise for two major reasons. First, it is through a well defined promotion structure that employees can see a career path and thereby build a commitment to the enterprise. Secondly, the promotion structure can help to ensure that the most able people obtain responsible positions. These general comments apply with particular force to the government education systems which employ large numbers of well-educated people, many of whom are of a similar age range, and many of whom are engaged in an activity, teaching, about which there is little consensus as to what constitutes effective performance. These general concerns are likely to become even more pressing in those education systems in which the slow-down in the rates of growth in enrolments and teacher numbers are likely to limit the availability of promotion positions in the foreseeable future.

The 1979 distribution of primary and secondary teachers between promotion positions in the Australian government system is shown in Table 4.8. At the time of writing, comparable data were not available for New Zealand. In this table the range of teaching positions in each system is designated as comprising four major groups: principal, deputy principal, other promotional positions, and assistants. The relation between the nomenclature employed in particular education systems and this four way classification is described in Appendix II to this report.

Several interesting patterns are evident from Table 4.8. First, in each system the proportion of teachers classified as either principal or deputy principal is considerably higher in the primary than in the secondary sector. However secondary schools tend to open up proportionately more opportunities for positions of responsibility at a level below that of principal or deputy principal. This phenomenon is reflected in Table 4.8, where in every system with the exception of Victoria, the proportion of secondary teachers in other promotional positions exceeds, in some cases by a considerable margin, the proportion of primary teachers in similar positions. Indeed, in the primary sectors of South Australia and Western Australia such positions in effect do not exist.

When one combines the proportions of teachers classified in promotion positions above that of the assistant class, the net result of the two patterns discussed above is that in most systems the proportion of teachers classified in promotion positions does not differ greatly between the primary and secondary sectors. As a generalization it could be stated that while those able to leave the assistant class in the primary sector have a strong probability of becoming classified as a principal or deputy principal, most of those who are able to leave the assistant class in the secondary sector will be classified in a promotion position below that of principal or deputy principal. These differing career paths largely reflect differences in the numbers, structure and size of primary and secondary schools. It should be noted, however, that the greater probability of primary teachers being classified as either principal or deputy principal does not necessarily mean that overall primary teachers may expect a financially more lucrative career than secondary teachers. As is shown in Appendix II, at most levels of classification in most systems, secondary teachers earn more than primary teachers. The relativities are such that, as a generalization, the salary payable to a primary principal is approximately the same as that paid to a secondary deputy principal, and the salary of a primary deputy principal is similar to that of a secondary senior teacher. In this sense therefore, the proportions in promotion positions earning a similar salary are roughly equivalent between the primary and secondary sectors.

Aside from the differences between primary and secondary promotion positions within each system, some interesting variations between systems are also evident from Table 4.8. At the primary school level for example, the proportion of teachers classified as principal ranges from 4.1 per cent in Victoria to 10.4 per cent in Queensland. The relatively high proportion of primary principals in Queensland reflects the proportionately large number of primary schools in that State. The Australian Capital Territory is the only system in which the proportion of primary teachers clasified as the equivalent of deputy principal exceeds by a significant margin the proportion classified as principal. This is a reflection of both the relatively low number of small primary schools in the ACT, which results in few schools with a principal only, and the policy of appointing more than one deputy principal to larger primary schools in the ACT.

As was noted earlier, the classification of 'other promotional positions' for all practical purposes does not exist in the primary schools of either South Australia or Western Australia. Victoria by contrast has almost 25 per cent of its primary teachers in this category. It should be noted that some two-thirds of these teachers in Victoria would not be holding classified senior teacher positions, but rather would be designated as assistant class teachers who hold positions of responsibility. These positions, which in 1979 carried an allowance of some $1,500 per year above the equivalent assistant class salary, are retained until promotion to senior teacher. The proportion of primary teachers classified as assistants ranges from just over 70 per cent in the ACT (leaving aside for the moment the case of Victoria for the reason just cited) to just under 86 per cent in South Australia and 87 per cent in Queensland. These marked differences reflect the size and structure of primary schools in the systems as well as differing policies for the allocation of promotion positions between schools.

At the level of the secondary school the differences in the proportion of promotion positions in each system are small when compared to the differences between the primary schools of the education systems. Secondary schools in each system have positions equivalent to the four way classification of Table 4.8 and there is little variation between the systems in the proportion of secondary teachers classified in each of the promotion positions. The relative congruence of the promotions structure in the secondary sector of each system is a reflection of the much smaller differences in the size and structure of secondary schools between the systems than was found to be the case for primary schools.

It is of interest to outline the distribution of the sexes between promotion positions. This is done in Table 4.9, where the proportion of classified positions held by females are recorded for each of the Australian government education systems. Although females comprise some two-thirds of all primary teachers in most systems, and over two-fifths of all secondary teachers in most systems, in no system are these proportions reflected in the number of promotion positions held by females. It is at the level of principal and deputy principal that the percentage of females is particularly low. The disproportionately low number of females in promotion positions in the schools reflects structural differences in the promotion possibilities for males and females. The fact that many women interrupt their teaching careers to bear and raise children will count against their promotion prospects in systems which place heavy weight upon continuity of service as a prerequisite for promotion. It may also be added that whatever one's view on the merits of single sex schools, or the policy of designating certain promotion positions as 'females only', these structural characteristics at least have the effect of maintaining some level of female representation in promotion positions.

Age Distribution of Teachers

The age distribution of teachers can have several important resource and educational implications. First, the age distribution of the teaching service will influence both the rate at which promotion positions become available, and also the extent of the pressure for promotional openings. Secondly, and related to this, the age distribution of teachers is likely to influence the resignation rate of teachers. Although resignation rates disaggregated by age are not available, it is not unreasonable to suggest that resignation is probably more likely amongst younger than older teachers. As well as the lure of superannuation, long-service leave and other benefits associated with length of service, it is also the case that attractiveness to other potential employers probably declines with age. Further, it has been demonstrated (Burkhardt, 1976) that teacher salary awards are structured such that teaching is a relatively attractive career financially during the first years of the post-graduation career, but that after reaching about age 30 teacher salaries fall relative to other professions. This factor increases the likelihood of young people remaining in teaching for only a few years. The third resource implication of the age distribution of the teaching force is that because of the incremental nature of many teacher salary awards, the older the teaching service, the higher will be salary costs.

Table 4.9 Proportion of Teaching Positions held by Females, Australian Government Education Systems, August 1979

	Australian Capital Territory 1978 %	New South Wales 1977 %	Victoria 1979[a] %	Queensland 1979[b] %	South Australia 1979 %	Western Australia 1979[b] %	Tasmania 1979[c] %
Primary							Primary & Secondary
Principals	19	8	27	5	22	6	10
Deputy Principals	48	19	28	10	21	46	27
Other Promotional Positions	66	61	38	94[d]	74[d]	-	46
Assistants	86	78	81	70	78	72	70
All Primary Teachers	77	68	69	63	71	64	62
Secondary							
Principals	-	12	9	2	13	2	
Deputy Principals	5	7	18	8	28	49	
Other Promotional Positions	34	20	21	34	24	14	
Assistants	59	49	48	50	50	44	
All Teachers	51	44	42	47	43	41	

Source: Data for the Australian Capital Territory and New South Wales were derived from Schools Commission, Australian Students and Their Schools (1979); data for Victoria derived from the Education Department, Compendium of Statistics; data for the other systems derived from the respective annual reports of the Education Departments.

[a] Victorian secondary schools data includes technical school teachers.

[b] Excludes teachers in special schools.

[c] Disaggregated figures for Tasmania primary and secondary schools not available.

[d] The total number of teachers in these categories is small.

Table 4.10 Age Distribution of Government School Teachers, Australia

		Age group (years)[a]						
		20-24 %	25-29 %	30-34 %	35-39 %	40-49 %	50-59 %	60+ %
Primary								
New South Wales	M	15.6	25.7	17.2	13.2	17.7	9.9	0.7
(1978)	F	33.6	25.1	10.2	8.3	15.8	6.5	0.5
Victoria	M	11.9	22.6	20.4	16.7	17.4	10.0	1.0
(1978)	F	28.3	33.4	14.2	9.1	10.0	4.4	0.6
Queensland	M	22.0	20.5	9.2	14.9	13.8	9.1	0.5
(1979)	F	38.0	20.1	9.1	12.6	13.3	6.2	0.7
South Australia	M	26.4	22.0	24.1	12.3	9.2	5.3	0.6
(1979)	F	36.7	23.2	12.1	8.8	9.3	8.5	1.5
Western Australia	M	24.5	23.3	15.6	12.2	13.6	9.6	1.3
(1979)	F	41.7	19.4	10.0	11.2	13.8	4.1	0.7
Secondary								
New South Wales	M	15.5	30.2	18.8	11.8	14.6	8.5	0.6
(1978)	F	28.1	35.3	11.9	7.6	11.0	5.5	0.7
Victoria[b]	M	7.1	25.3	23.3	15.8	17.3	10.2	1.0
(1978)	F	25.7	40.3	13.3	6.4	8.5	5.4	0.7
Queensland	M	16.7	26.7	21.5	14.5	13.2	7.0	0.4
(1979)	F	39.7	27.2	10.0	9.4	8.8	4.4	0.5
South Australia	M	16.0	33.4	26.2	12.2	7.7	4.1	0.4
(1979)	F	29.2	30.5	14.2	7.9	10.7	6.8	0.7
Western Australia	M	15.3	24.4	23.6	13.7	15.4	6.8	0.8
(1979)	F	32.2	24.5	11.2	10.5	15.6	5.5	0.4

Source: Australian Education Council, *Statement by State and Territory Education Authorities Regarding Changing Enrolments and Their Effects, 1980*. Melbourne: AEC, 1980.

[a] Age groups for Queensland, South Australia and Western Australia are 20-25, 26-30, 31-35, 36-40, 41-50, 51-60, and 60+.

[b] Includes teachers in technical schools.

The basic data for this discussion is contained in Table 4.10 which shows the age distribution of primary and secondary teachers by sex in five of the Australian government systems. At the time of writing, comparable data were not available for the Australian Capital Territory, Tasmania or New Zealand. From this table it is evident that teaching is a relatively youthful profession. Across the five systems, of all the male teachers in either the primary or secondary sector, between one-third and one-half are aged less than 30 years. Female teachers on balance are even younger: it is only in the primary sector of New South Wales that the proportion of female teachers aged less than 30 years falls below 50 per cent. In contrast, the over 50 age group in most sectors in most systems contains less than 10 per cent of teachers. Because female teachers tend to be younger than male teachers, and a relatively high proportion of primary teachers are female, on average primary teachers tend to be younger than their secondary counterparts.

Table 4.11 Age Distribution of Australian Teachers, 1963 and 1979

Age group (years)		21-30 %	31-40 %	41-50 %	51-65 %
Percentage of teachers	1963	41	19	15	17
	1979	51	26	14	8

Source: Bassett (1980:74).

Table 4.10 reveals some interesting differences in the age distribution of teachers between the education systems. For example, amongst all sectors in the five systems, the Victorian secondary sector has the lowest proportion of teachers aged less than 30 years. In large part, this would be due to the inclusion in this sector of Victorian technical school teachers, many of whom would have completed several years of industrial experience before commencing teacher training. The secondary sector of South Australia has the lowest proportion of teachers aged 50 years or more, suggesting relatively few promotion opportunities caused by retirements from that system over the rest of the 1980s.

While detailed historical age distribution data are not available, there is some evidence to suggest that over the past 20 years the average age of teachers has declined. Bassett (1980) reported the results of an Australia-wide survey of teachers conducted through the auspices of the Australian College of Education, and which included questions on the age of teachers. In comparison with the results of the 1963 predecessor of this survey, it was evident that the age distribution of teachers as a group had shifted downwards between 1963 and 1979. These data, which are reported in Table 4.11, indicated that the great expansion of teacher numbers in the 1960s and 1970s, which was largely made possible by the recruitment of young teachers, did result in a considerable decline in the proportion of teachers aged 40 years or more. Evidence is emerging however that this long-term trend has been reversed in recent years, and that the average age of the teaching profession is beginning to rise. To illustrate, data are presented in Table 4.12 which show for the Victorian government system the median ages of male and female primary, secondary and technical teachers for the years 1972, 1976, and 1978. It is clear from this table that the trend in Victorian government schools over the period 1972 to 1978 has been for a slight but nevertheless noticeable ageing of the teaching force.

The Professional Qualifications of Teachers

An increase in the average level of professional qualifications held by teachers normally implies a rise in average teacher salary costs, and hopefully, implies an improvement in the quality of teachers in the schools. It may also be the case that resignation rates are higher amongst the better qualified teachers because of the wider range of alternative

Table 4.12 Median Age of Classified Government School Teachers, Victoria, 1972 to 1978

	1972	1976	1978
Primary			
Male	32.3	32.9	33.8
Female	25.9	27.0	28.3
Total	n.a.	28.4	29.5
Secondary (excluding Technical)			
Male	29.0	29.4	30.6
Female	25.9	26.5	27.6
Total	n.a.	28.0	28.9
Technical			
Male	31.5	37.6	35.8
Female	30.8	30.3	32.2
Total	n.a.	36.6	36.2

Source: Education Department of Victoria, Compendium of Statistics 1979.

employment opportunities available to them. A broad indication of the level of professional training of Australian teachers is provided in Table 4.13 which shows for the Australian government systems the distribution of primary and secondary teachers according to the number of years of training. This table shows that in most systems, the modal period of training for primary teachers is three years, and that of secondary teachers is four years.

Table 4.13 Distribution of Government School Teachers by Length of Pre-Service Course, Australia 1979

	Primary (years)					Secondary (years)				
	One or less %	Two %	Three %	Four %	Five or more %	One or less %	Two %	Three %	Four %	Five or more %
ACT	2	47	26	20	3	7	13	13	47	17
NSW	2	44	38	8	1	4	17	19	46	11
Vic.	6	25	54	6	2	11	12	5	54	14
Qld	13	31	50	3	-	15	23	26	29	5
SA	6	27	50	14	1	3	3	27	54	10
WA	2	32	57	3	1	4	16	37	33	7
Tas.	6	28	33	25	1	4	9	17	50	15

Source: Bassett (1980).

Note: Proportions may not sum to 100.0 because of rounding and non-response to survey item.

It is now common in the government education systems of Australia and New Zealand for the minimum periods of training for new primary and secondary teachers to be three and four years respectively. What is not common amongst the systems however, are the policies employed to upgrade the professional qualifications of teachers who lack these minimum requirements. While each system makes provision for study leave, such provision differs between systems with respect to the types of courses involved, numbers of teachers involved, and conditions attached to the leave. In addition, several systems make available to teachers the possibility of improving their qualifications by means of study for internal departmental certification. Variations between the systems in such practices accounts for the finding of Bassett (1980), that while the overall level of teachers qualifications has improved markedly over the period from 1963, the rate of improvement has been more rapid in some systems than in others.

The Current Structure of the Teaching Service: Some Implications

It was argued earlier in this chapter that the prospect of enrolments declining over the decade in a number of systems was likely to lead to an increase in per student operating costs. One of the reasons advanced for this prognosis was the impact upon costs of recent and prospective changes in the structure of the teaching service. In particular, it was argued that if the average age of teachers rose in the 1980s, average teacher salaries could be expected to also increase until teachers reached the top of their respective salary scales. Evidence was presented in the section on the age distribution of teachers to suggest that in Victoria at least, the median age of teachers had risen slightly over the past few years. The relevant question is whether this increase in average teacher age is likely to continue during the 1980s.

The proportion of teachers who reach the mandatory retirement age is small, and retirements count for only a relatively low proportion of those who leave teaching. For example, in both Queensland and South Australian the proportion of the teaching service who retired between 1978 and 1979 was less than one per cent. It is unrealistic over the next few years to expect, that the vacancies caused by teacher retirements will constitute significant numbers in any of the education systems, a comment that is reinforced by the small proportion of teachers aged more than 50 years, as revealed by Table 4.10.

In regard to projections of teacher resignation rates the position is less clear. During the early to mid-1970s, teacher resignations in a number of systems were running at annual rates in excess of 10 per cent. Since the mid-1970s however, teacher resignation rates on an Australia-wide basis have halved for primary teachers and more than halved for secondary teachers; by 1979 the resignation rate in both sectors was approximately 6 per cent (Tertiary Education Commission, 1979). In some systems the decline in resignation rates has been even more rapid. If these relatively low resignation rates are maintained they will imply, in the absence of a strong growth in total teacher numbers, an increase in the average age of teachers, since relatively few exit students will need to be recruited. In the same way, if the relatively low resignation rates coincide with a relatively low growth (if any) in total teacher numbers because of declining enrolments, this could mean a decline in the number of opportunities for promotion and even for transfer between schools.

Prospective changes in teacher resignation rates are of major importance in determining the demand for new teachers, and also in influencing the age structure and career prospects of the teaching service. In the case of the largest system, New South Wales, for example, if teacher resignation rates rose one percentage point above the projected level, an additional 400 teachers would need to be recruited to fill these vacancies. The 'freeing-up' of the system that could result from such a change may be considerable. Whether teacher resignation rates are likely to rise over the 1980s is a moot point. There are strong grounds for believing that the general state of the economy and the range of alternative employment opportunities open to teachers will be important influences on teacher resignation rates. Burke (1972) and Burkhardt (1976) have argued persuasively that teacher resignation rates are inversely related to general unemployment levels, and Burke et al., (1981) have estimated that for female teachers at least, the relationship is such that if unemployment fell by 2.4 percentage points, female teacher wastage rates (which largely comprise resignations) would rise by some 2 percentage points; a weaker relation in the same direction appears to exist for male teachers.

These relations underline the importance of the macro-economic variables discussed earlier in this chapter. If the recent low growth rate of real GDP in Australia and New Zealand is not lifted over the 1980s, unemployment will rise and as a consequence, teacher resignation rates would probably fall. This in turn would lead to a decrease in the number of new entrants to the teaching force, an acceleration of the trend towards an ageing of the teaching service, and little if any increase in the number of promotion vacancies. It should be emphasized however, that even if relatively high GDP growth rates return, in most systems the opportunities available for teacher employment are likely to be fewer in number and smaller in range than those which applied in the 1960s and early 1970s.

CHAPTER 5

THE ALLOCATION OF PERSONNEL RESOURCES TO GOVERNMENT SCHOOLS

This chapter describes the means by which teachers and other personnel are allocated to schools, and the formulae which determine their allocation. The system-level personnel allocation policies provide the background for the analyses of within school resource usage conducted in companion volumes (Ainley, 1982 and Sturman, 1982), and reveal implicit assumptions that are made about appropriate patterns of school organization. In addition, the description and analysis of such policies helps to illuminate debate on the personnel and financial implications of adopting alternative school structures and staffing patterns.

Allocative Mechanisms

There are five principal mechanisms by which teachers and other staff may come to be located in government schools. By far the most common is the direct appointment of staff by an education department to a school or group of schools according to formulae which relate the level and configuration of personnel to school enrolments. Secondly, a smaller but nonetheless significant number of direct staff appointments can be made above formulae according to an assessment of individual school needs. All systems make such appointments although, as discussed later, the extent and the methods used for assessing needs varies between the systems.

Thirdly, it is possible for some government schools to acquire teachers and other personnel through a procedure whereby the education department pays the salaries of staff in whose appointment the school plays a direct role. This procedure is most commonly used for the employment of some ancillary staff in some systems. Fourthly, schools may acquire staff through procedures such as the operation of the Commonwealth Schools Commission recurrent grants scheme in Tasmania. In that system, approximately 70 per cent of the general recurrent funds made available by the Commonwealth Schools Commission are allocated directly to schools by the relevant State-wide Disbursement Committee (Perchard, 1979). The actual amount allocated to each school has both an enrolment and a needs component. Within broad guidelines, the schools are free to deploy these funds in any way that they see fit. In 1979 more than 80 per cent of the funds were spent by schools to hire either additional teaching staff or teacher aides (Perchard, 1979).

Fifthly, some schools in some education systems may acquire personnel through the actively seeking out of funds from either their own school community, or more commonly, from government agencies other than an education department. Probably the best examples of the latter are the operation of the Schools Commission Innovations Program and Disadvantaged Schools Program which have offered schools and teachers within schools the opportunity to supplement their traditional sources of personnel. A companion volume (Sturman, 1982) describes a number of additional instances of school initiatives to supplement personnel resources.

In general, for the great majority of schools in each system, the major proportion of their personnel resources are obtained through direct appointment by the education department according to either formulae related to enrolments, or an 'above-formula' assessment of special needs. Accordingly the principal focus of this chapter is upon these mechanisms.

Formulae Allocation to Schools: Teachers

Of the total stock of teachers employed by each education system to teach in schools, the great majority are allocated according to formulae or schedules which specify the number and configuration of teachers which schools of each type and size are entitled to receive. The proportion of teachers allocated to schools via the staffing formulae does vary between the eight education systems, and in some instances the proportion also varies between primary and secondary sectors in the one system. However, it appears that across the eight systems at least 90 per cent of the available teaching service has been appointed to schools via the staffing formulae.

The reasons for the extensive utilization of formulae in allocating teachers to government schools can be traced to the early stages in the development of the systems. At their inception the centralized administration of the education departments was seen to play a major role in the efficient and equitable provision of public education in a huge and sparsely populated land. This view was epitomized by the declaration of Wilkins, the first Secretary of the New South Wales Council of Education, that a 'national system':

> . . . demands but one code of laws applying to every school, and but one organization to carry them into effect. On this account it is more readily supervised, more effectively controlled, and so more cheaply administered . . . It secures a well-defined course of instruction and a fixed standard of attainments. (quoted in Partridge, 1973:20)

The operation of the staffing formulae was administratively convenient in that it did not necessitate a complex structure for assessing individual school staffing requirements, and it was *prima facie* equitable in that it guaranteed children of disadvantaged backgrounds and in disadvantaged locations access to teachers in the same proportion as their more favoured peers.

Table 5.1 Formula Allocation of Teachers to Primary Schools 1980 (Expressed in Full-time Equivalents)

Enrolment	ACT[a]	NSW[b]	Vic.	Qld[c]	SA[d]	WA[e]	Tas.[f]	New Zealand	
								Full and contributing	Intermediate
25	1.2	1.0	1.0	1.0	2.3	1.8	1.0	1.0	..
50	2.5	2.0	3.0	2.0	2.4	2.2	2.3	2.0	..
100	4.8	4.2	5.0	4.0	4.6	5.3	4.3	4.0	..
200	9.1	8.6	9.0	7.0	9.4	9.6	8.5	7.0	8.5
300	13.9	11.9	13.0	11.0	13.9	12.7	12.8	9.7	11.7
400	18.2	15.9	17.0	17.6	18.0	17.0	17.6	12.9	15.9
500	22.1	19.1	21.0	20.6	22.2	21.4	21.8	16.1	21.1
600	25.8	23.3	25.0	22.6	26.2	26.0	25.9	19.4	24.4
700	29.6	27.5	29.0	28.6	30.0	29.0	30.2	22.6	27.6
800	33.3	30.6	33.0	31.6	33.8	32.4	34.3	25.8	30.8
900	37.0	33.7	37.0	36.6	37.7	n.a.	38.4	29.0	34.0
1000	..	36.9	41.0	39.6	41.5	n.a.	..	32.3	..
1100	..	41.0	..	43.6	..	n.a.	..	..	..
1200	..	..	..	46.6	..	n.a.	..	..	..

Source: System Level Reports.
Notes: See Appendix III.

Operation of the Staffing Formulae

In each system, schools supply to the relevant education authority an estimate of their anticipated enrolment for the next school year, and it is this estimate which forms the basis for determining the staffing entitlement of the school for the forthcoming year. This common procedure is however undertaken through a variety of means. In Queensland for example the regional authorities play a more important role in verifying enrolment estimates and staffing requirements, and at the final stage in appointing individual teachers to particular schools, than do the regional authorities in other systems. In the primary school sector of New Zealand, the main responsibility for the administration of the staffing schedules is exercised by education boards.

A second difference between systems lies in the manner in which the enrolment projections that schools supply are utilized in order to determine teacher entitlements. While schools in each system have to supply their anticipated enrolments disaggregated by year level, in most systems it is the total enrolment of a school which determines the number and configuration of teachers to which it is entitled. The major exceptions to this practice are the secondary schools of New South Wales and Western Australia. In New South Wales the anticipated enrolment for each secondary year level is examined separately and a different schedule is applied to determine the staffing entitlement per year level, the total school entitlement being the sum of the separate year level entitlements. Years 8, 9 and 10 are staffed according to identical schedules, which provide proportionately more staff than for Year 7. The highest level of staffing is provided by the schedules for Year 11 and Year 12. The Western Australian procedure is similar, in that the total school entitlement to teachers is based upon the number of lower school (i.e. Years 8, 9, and 10) and upper school (Years 11 and 12) classes which can be formed from the enrolments at those year levels. As in New South Wales, the Western Australian secondary staffing schedule entails a higher allocation of teachers to the upper year levels.

The practice of utilizing individual year levels rather than total school enrolments to determine teacher entitlements suggests a concern about the particular demand for teachers generated by the distribution of enrolments within an individual school. In other systems this concern is reflected in the possibilities for schools to obtain an additional allocation of teachers to cope with the exigencies prompted by an unusual distribution of enrolments between year levels.

Size of School and Teacher Numbers: Primary Schools

The schedules used to supply teachers to primary schools are embodied in Table 5.1 which shows over the range of primary school sizes applicable in each system (to a maximum of 1200 students) the minimum teacher entitlements generated by the individual staffing schedules.

In interpreting Table 5.1 and its supporting tables several warnings should be heeded. First, as the extensive footnotes to the table indicate, it has been necessary to make a number of assumptions to derive the table and these assumptions should be carefully noted. Secondly, the number of teachers associated with each enrolment level should be read as the guaranteed minimum number of teachers to which schools of particular enrolment sizes are entitled; the actual number of teachers in any given school will be determined by the minimum entitlement plus any discretionary teacher allocations from the system and, less commonly, the resources of the school itself. Thirdly, the data at this stage indicate nothing of the types of teacher appointed at each enrolment level. Consequently the tables can and do contain teachers at different levels of seniority and of different functions. Finally, the particular enrolment levels that are utilized in Table 5.1 and its supporting tables do produce some quirks in the teacher entitlement figures because in some instances, those enrolment levels are close to either the top or the bottom of an enrolment range used by the systems in determining staffing entitlements. For example, in 1980 a Queensland primary school of 300 students was entitled to a minimum of 11 teachers. If that school had enrolled an additional student, the staffing schedule entitled it to a minimum of 12 teachers plus one local reliever, a total staff complement of 13 teachers. This is the major reason for the increase of 6.6 in the number of teachers Queensland primary schools were entitled to as they moved from an enrolment of 300 to one of 400 students.

Despite the differences between the eight systems in the minimum number of teachers to which schools at each enrolment level were entitled, the data in Table 5.1 indicate that in practice each schedule closely approximates a linear equation relating the number of teachers (T) to the school enrolment (E). Taking the general form of this equation as

$$T = a + bE,$$

the values of $\underline{a}$ and $\underline{b}$ for each system as derived from the data in Table 5.1 are shown in Table 5.2, along with the relatively high value of $\underline{r}$ (or correlation coefficient between T and E) for each equation. As can be seen from that table, the value of $\underline{a}$ ranges from 0.04 to 1.3 with a median value of 0.77, while $\underline{b}$ has a median value of 0.040 and a range from 0.032 to 0.043.

Taken together, the $\underline{a}$ and $\underline{b}$ values of the staffing equation for each system can be used to indicate both the absolute number of teachers appointed to schools at each enrolment level, as well as the relative allocation between small and larger schools. The value of $\underline{a}$ reflects the base number of teachers supplied to schools regardless of their enrolment, and the value of $\underline{b}$ reflects the rate at which the entitlement to teachers grows as enrolments increase; the greater the values of $\underline{a}$ and $\underline{b}$ the higher the level of staffing for each school. The magnitude of $\underline{a}$, is an important indicator of the relative staffing of small schools within education systems. The value of $\underline{b}$ approximates closely

Table 5.2 Formula Allocation of Teachers to Primary Schools 1980
Functional Form: Teachers = a+b (Enrolments)

	a	b	r
Australian Capital Territory	0.91	0.041	0.999
New South Wales	0.68	0.037	0.999
Victoria	0.77	0.040	1.000
Queensland	0.04	0.040	0.999
South Australia	1.13	0.041	0.999
Western Australia	0.94	0.040	0.999
Tasmania	0.08	0.043	1.000
New Zealand			
- full and contributing	0.41	0.032	1.000
- intermediate schools	1.30	0.037	0.997
Median values	0.77	0.040	0.999

Source: Derived from Table 5.1.

the number of additional teachers provided as enrolments rise: the difference between values of 0.032 and 0.043 in two education systems is equivalent to schools in the latter system being entitled to receive 11 more teachers per 1000 students than schools in the former system.

The relationship between school size and teacher entitlements is perhaps best conveyed by an examination of the relationship between enrolment size and the student-teacher ratios embodied by the primary school staffing schedules: these student-teacher ratios are recorded in Table 5.3. It is apparent that, in the main, for each system the larger the school enrolment, the higher is the student-teacher ratio built into the staffing schedule, at least in the enrolment range above 100 students.

It should be noted that the student-teacher ratios shown in Table 5.3 are not necessarily equivalent to average class sizes. At a given student-teacher ratio, the average class size will be determined by the proportion of the teaching week in which teachers are not engaged in class teaching (Lindner, 1981). The higher the proportion of non-class teaching time, the higher will be average class size, and vice versa. Accordingly, it should not be presumed from Table 5.3 that in systems with relatively low student-teacher ratios, schools will also have relatively small average class sizes. The extent to which small average class sizes are attained will be largely dependent on policies in regard to non-contact time for teachers. This issue is discussed further by Ainley (1982).

While the extent of weighting of student-teacher ratios towards small primary schools as revealed by the primary schools staffing schedules varies from system to system, the fact that in general there appears to be a positive relation between the student-teacher ratios and school enrolment presumably reflects a common perception across the education systems of the relative staffing needs of schools of differing sizes.

Table 5.3 Formula Allocation of Teachers to Primary Schools 1980. Student-Teacher Ratio by Enrolment Level

								New Zealand	
Enrolment	ACT	NSW	Vic.	Qld	SA	WA	Tas.	Full and contributing	Intermediate
25	20.8	25.0	25.0	25.0	10.9	13.9	25.0	25.0	..
50	20.0	25.0	16.7	25.0	20.8	22.7	21.7	25.0	..
100	20.8	23.8	20.0	25.0	21.7	18.9	23.3	25.0	..
200	22.0	23.3	22.2	28.6	21.3	20.8	23.5	28.6	23.5
300	21.6	25.2	23.1	27.3	21.6	23.6	23.4	31.0	25.6
400	22.0	25.2	23.5	22.7	22.2	23.5	22.7	31.0	25.2
500	22.6	26.2	23.8	24.3	22.5	23.4	22.9	31.0	23.7
600	23.3	25.8	24.0	26.5	22.9	23.1	23.2	31.0	24.6
700	23.6	25.4	24.1	24.4	23.3	24.1	23.2	31.0	24.4
800	24.0	26.1	24.2	25.3	23.7	24.7	23.3	31.0	26.0
900	24.3	26.7	24.3	24.6	23.9	n.a.	23.4	31.0	..
1000	..	27.1	24.4	25.3	24.1	n.a.	..	31.0	..
1100	..	26.8	..	25.2	..	n.a.	..	..	..
1200	..	..	..	25.8	..	n.a.	..	..	..

Source: Derived from Table 5.1.

The staffing schedules imply that a minimum level of staffing is necessary to cope with the administrative needs of a school and to mount its educational program, regardless of the size of the school.

The staffing schedules, by allowing for a fixed staffing component and a variable component related to enrolments, facilitate the achievement of economics of scale as reflected in the positive correlation between enrolment size and student-teacher ratios. The extent to which the rise in the student-teacher ratio over the enrolment range is actually translated into a decrease in per pupil recurrent instructional costs as enrolments increase will be influenced by the configuration of the teaching staff (and the consequent total salary bill) at different enrolment levels. The configuration of teaching staff at different enrolment levels is discussed later in this chapter.

Size of School and Teacher Numbers: Secondary Schools

Using a similar approach to that outlined in the previous section, the secondary staffing schedules supplied by each of the education systems have been used to derive the minimum teacher entitlements for the enrolment ranges recorded in Table 5.4. Once again, the footnotes to the table which detail the assumptions employed in deriving the table should be carefully examined before interpreting the table. It should also be noted that Table 5.4 excludes the staffing of the secondary departments of combined primary-secondary schools.

As was the case with the primary schools, Table 5.4 reveals that quite significant differences exist between the eight education systems in the minimum number of teachers to which the staffing schedules stipulate secondary schools are entitled. In general, the higher the school enrolment, the greater is the size of this difference.

Without exception, in each system a secondary school of given enrolment size is entitled to receive a minimum number of teachers significantly greater than the entitlement of a primary school of the same size. This contrast is perhaps made more striking when one examines the values of $\underline{a}$ and $\underline{b}$ presented in Table 5.5, which were generated by fitting a simple linear equation relating the teacher entitlements and enrolment data of Table 5.4. While the median values of $\underline{a}$ and $\underline{b}$ for primary schools are 0.77 and 0.040 respectively, the equivalent secondary school median values are 7.43 and 0.059. Not only are secondary schools generally provided with a higher base number of teachers than primary schools, but also the number of teachers allocated to secondary schools increases more rapidly as enrolments rise.

By definition, the more generous formulae teacher allocations to secondary schools translate into a relatively lower student-teacher ratio at each enrolment level. The student-teacher ratios that are implied by the secondary staffing schedules are given in Table 5.6. This table demonstrates that the secondary staffing schedules generally result in a positive relationship between student-teacher ratio and school size.

Table 5.4 Formula Allocation of Teachers to Secondary Schools 1980 (Expressed in Full-time Equivalents)

Enrolment	ACT		NSW[c]	Vic.[d]		Qld	SA	WA[f]	Tas.[g]	New Zealand
	High[a]	College[b]		High	Tech.[e]				High	
200	..	..	20.0	n.a.	n.a.	18.0	17.7	17.4	..	14.3
300	26.1	..	26.7	26.0	24.4	24.0	25.0	22.2	21.7	17.9
400	32.0	..	32.6	31.6	30.0	30.0	32.0	29.9	28.0	24.3
500	38.0	46.8	36.7	37.1	38.7	36.0	38.7	33.1	34.5	28.8
600	44.0	54.5	41.4	42.7	45.9	42.0	45.0	36.1	40.7	32.8
700	49.9	62.6	46.0	48.2	53.0	47.0	51.2	42.1	46.8	37.0
800	56.0	70.6	53.4	53.8	60.1	53.0	57.1	48.1	53.0	41.3
900	62.3	78.7	59.5	59.3	67.3	59.0	62.9	52.6	59.2	45.6
1000	68.5	..	64.2	64.9	74.4	64.0	68.8	58.6	65.5	49.8
1100	..	..	69.1	70.4	81.6	70.0	74.7	63.1	..	53.9
1200	..	..	73.9	..	..	75.0	80.6	66.1	..	58.1
1300	..	..	79.4	..	..	81.0	86.5	73.6	..	63.3
1400	..	..	84.9	..	..	86.0	92.3	78.1	..	68.3
1500	..	..	92.1	..	..	91.0	..	..	..	71.5

Source: System Level Reports.
Notes: See Appendix III.

Table 5.5 Formula Allocation of Teachers to Secondary Schools 1980 Functional Form: Teachers = a+b (Enrolments)

	a	b	r
Australian Capital Territory			
- High schools	7.78	0.061	1.000
- Secondary colleges	6.71	0.080	1.000
New South Wales	9.78	0.054	0.999
Victoria			
- High schools	9.37	0.056	1.000
- Technical schools	4.35	0.069	0.994
Queensland	7.60	0.056	1.000
South Australia	7.26	0.061	0.999
Western Australia	7.70	0.050	0.999
Tasmania - High schools	3.11	0.062	1.000
New Zealand	5.94	0.044	0.999
Median values	7.43	0.059	1.000

Source: Table 5.4.

Size of School and Teacher Numbers: Combined Primary-Secondary Schools

In most systems the primary and secondary elements of such schools are staffed separately, and for staffing purposes the primary component of a combined primary-secondary school is treated in the same way as a self-contained primary school of equivalent enrolment size. As such, the data outlined in Tables 5.1 to 5.3 would approximate closely the minimum teacher entitlements of the primary component of a combined primary-secondary school. The major difference between the primary component of a combined primary-secondary school, and a self-contained primary school, is that in all systems the former is entitled to additional senior teaching staff, part of whose brief is to liaise with, and in a number of instances manage, the secondary component of the school.

In terms of teacher numbers, the most distinctive feature of the combined primary-secondary schools in each system is to be found in the secondary component which is generally staffed according to relatively low student-teacher ratios. This is not unexpected, since as was noted in the previous section, small secondary schools are generally favoured by a relatively generous staffing schedule, and the secondary components of combined primary-secondary schools can, in a staffing sense, in most cases be considered as particularly small secondary schools. In some systems, such as Victoria, this results in a staffing schedule for the secondary components of combined primary-secondary schools which takes account of the number and composition of year levels with a proportionately higher teacher allocation to the upper secondary year levels.

Table 5.6 Formula Allocation of Teachers to Secondary Schools 1980. Student-Teacher Ratio by Enrolment Level

Enrolment	ACT		NSW	Vic.		Qld	SA	WA	Tas.	New Zealand
	High	College		High	Tech.				High	
200	..	..	10.0	..	..	11.1	11.3	11.5	..	13.9
300	11.5	..	11.2	11.5	12.3	12.5	12.0	13.8	13.8	16.8
400	12.5	..	12.3	12.7	12.7	13.3	12.5	13.4	14.3	16.5
500	13.2	10.7	13.6	13.5	12.9	13.9	12.9	15.1	14.5	17.4
600	13.6	11.0	14.5	14.1	13.1	14.3	13.3	16.6	14.7	18.3
700	14.0	11.2	15.2	14.5	13.2	14.9	13.7	16.6	15.0	18.9
800	14.3	11.3	15.0	14.9	13.3	15.1	14.0	16.6	15.1	19.4
900	14.4	11.4	15.1	15.2	13.4	15.3	14.3	17.1	15.2	19.7
1000	14.6	..	15.6	15.4	13.4	15.6	14.5	17.1	15.3	20.1
1100	..	..	15.9	15.6	13.5	15.7	14.7	17.4	..	20.4
1200	..	..	16.2	..	..	16.0	14.9	18.2	..	20.7
1300	..	..	16.4	..	..	16.0	15.0	17.7	..	20.5
1400	..	..	16.5	..	..	16.3	15.2	17.9	..	20.5
1500	..	..	16.3	..	..	16.5	..	..	..	21.0

Source: Table 5.4.

The Configuration of Teachers in Schools

In most systems the staffing schedules specify two aspects of the configuration of teachers which schools are entitled to receive. First, in most systems the staffing schedules indicate the number of particular teacher promotional classifications amongst the staff - the number of deputy principals, senior teachers, assistants, and so on. In those systems which employ a promotion structure that allows for several graduations within each classified position, the staffing schedule will also indicate the particular level of the promotion position to which the school is entitled.

Several systems also allocate to schools a designated number of quasi-promotion positions which the school is able to allocate amongst its staff. For example, Victorian secondary schools are able to allocate to a number of assistant class teachers a higher duties or position of responsibility allowance which in 1979 was approximately $1500 per annum. The number of such allowances which a school may distribute is dependent upon the school enrolment; for example, a school with 100 students was allocated 4 allowances and a school of 1000 enrolments was able to distribute 12 allowances. The allowances are normally reviewed annually and do not remain with a teacher upon promotion or transfer to another school, but rather are able to be reallocated to another staff member.

A similar system operates in New Zealand secondary schools except that a wider range of responsibility allowances is available to be allocated by the school. Under this system the school is allocated a number of Positions of Responsibility (PR) units according to the school enrolment and total teacher numbers such that, for example, a school with 20 teachers would receive 18 PR units and a school of 60 teachers is entitled to 54 PR units. These units are then able to be allocated by the school amongst several PR classifications, each of which is equivalent to a specified number of PR units. A PR1 classification is equivalent to one PR unit, PR2 to two PR units, PR3 to four PR units and PR4 to six PR units. Each of the four PR classifications carries a different monetary allowance. In October 1980 these ranged from $NZ457 for a PR1 position to $NZ3028 for the holder of a PR4 position. The school is free within certain limits to allocate the PR allowances until the maximum number of PR units is reached. The Education Department does publish a suggested distribution of PR positions and does stipulate certain restrictions (for example, a maximum number of PR1 positions for each PR unit entitlement) but in the main New Zealand secondary schools have considerable autonomy in this sphere.

The procedures adopted in New Zealand and Victorian secondary schools for the allocation of responsibility and higher duties allowances would appear to have several advantages. Teachers in non-promotion positions are able to be given additional responsibilities and are able to have these recognized in a tangible way, and by leaving the allocative decision with the school it could be expected that the most suitable teachers in fact receive the allowances. The possibility of reallocating the allowances on an annual basis assists this. The New Zealand procedure has the further advantage of offering a great degree of flexibility in the mix of the responsibility positions which schools may adopt.

The second aspect of the configuration of a school staff which may be explicit in a staffing schedule is the mix of teaching responsibilities within the school, over and above the distribution of responsibilities implied by the distribution of promotion positions. For example, some staffing schedules indicate the enrolment point at which the school becomes entitled to the appointment of a teacher-librarian, a counsellor, music teacher, and so on. All systems make available to schools the opportunity to request certain types of teachers within their overall staff allocation, and it could be expected that in systems where particular types of specialist teachers were relatively plentiful, schools could avail themselves of such staff through a request to staffing office. Accordingly, it is only where the demand from schools for particular types of teachers is considered likely to exceed the supply, that explicit guidelines for their allocation are likely to appear in the staffing schedule.

Over and above the capacity of schools in all systems to influence the configuration of teacher specialities through requests for particular types of teachers within the total staff allocation, in some systems a further degree of flexibility and school autonomy has been made possible. The primary schools of Victoria are a good illustration of this development. Until 1980 the staffing schedule for Victorian primary schools included a specialist teacher component within the total staff allocation. Depending upon the total school enrolment a school was entitled to receive a certain number of specialist teachers such as a teacher-librarian, art teacher, music teacher and so on. From the beginning of the 1980 school year the school itself has been able to indicate a preference for the type of teacher desired to fill any specialist teacher vacancy. The devolution of the responsibility for this decision to primary schools in Victoria is a recognition of the diversity of views which may exist on the appropriate balance of specialist and generalist teachers. It should also be added that the devolution of this responsibility to the school occurred against a background of significant increases in the number of specialist teachers in Victorian primary schools, brought about in large part by the granting of paid study leave to a relatively large number of primary teachers who wished to acquire a fourth, and specialized, year of training. As such, the significant increase in the supply of specialist teachers over the 1970s diminished the need for such staff to be rationed amongst schools via the staffing schedule.

Teacher Configurations in Primary Schools

The configuration of a teaching staff in terms of the mix of promotion positions and the range of subject offerings can have significant implications for the salary costs of operating the school, as well as for the division of labour within the school and the nature of the educational program which it is able to provide. The policies of the education systems in regard to staffing configurations is therefore an important issue. Discussion of this issue is hampered, however, by the variety of teacher classifications within the systems and variations in nomenclature. Accordingly, it has been necessary to devise a means of categorizing teachers which will enable a meaningful comparative discussion of system policies. The details of the categorization that has been developed and the source materials for its application are outlined in Appendix II. In brief, four categories of teacher classification are utilized: principal, deputy principal, senior teacher, and assistant; the boundaries of each category are formed by relative salary levels.

Tables 5.7(a), (b) and (c) show the 1980 relationship between school size and the configuration of promotion positions in the primary school sectors in each of the eight education systems. The tables were derived from combining the staffing schedules described earlier in this chapter with the categorization of teaching positions outlined in Appendix II.

The three tables reveal some interesting patterns. First, as was noted in Chapter 4, not all systems have an equivalent range of promotion positions in primary schools. For example, neither South Australia nor Western Australia have a position equivalent to the senior teachers of other systems. Victoria on the other hand is close to a five category promotion system because of the assistant with responsibility position. Secondly, and related to the first point, the systems vary in the enrolment level at which particular promotion positions are allocated to schools. In Western Australia and Queensland for example, teachers who can be categorized as earning a salary that is similar to the deputy principal of a relatively large school are appointed as principals of schools with enrolments of well below 100 students. In each of the other systems persons of that classification are generally not appointed to primary schools with an enrolment of less than about 200 students. A trade-off situation appears to be working in the allocation of promotion positions to the smaller primary schools. Some systems appoint a very senior teacher as principal but provide few, if any, teachers in promotion positions, while other systems adopt the policy of appointing a less senior person as teacher-in-charge of the school but supplying proportionately more assistant class teachers. The net effect therefore is that while the teacher salary costs associated with schools of the same size may be similar between systems, the seniority configuration of the schools does differ.

Table 5.7(a) Formula Allocation of Teachers to Primary Schools. Classification of Teachers, Australian Capital Territory, New South Wales and Victoria, 1980[ab]

	Australian Capital Territory				New South Wales				Victoria				
Enrolment	Prin.	Deputy prin.	Senior teacher	Assts	Prin.	Deputy prin.	Senior teacher	Assts	Prin.	Deputy prin.	Senior teacher	Assts.[c] (R)	Assts
25	-	-	-	1.2	-	-	-	1.0	-	-	-	-	1.0
50	-	-	1	1.5	-	1	-	1.0	-	-	-	1	2.0
100	-	-	1	3.8	-	1	-	3.2	-	-	-	2	3.0
200	-	1	2	6.1	-	1	1	6.6	1	-	1	2	5.0
300	1	1	2	9.1	-	1	1	9.9	1	-	1	2	9.0
400	1	2	3	12.2	-	1	2	12.9	1	1	1	2	12.0
500	1	2	4	15.1	-	1	3	15.1	1	1	1	3	15.0
600	1	2	4	18.8	1	1	3	18.3	1	1	3	3	17.0
700	1	2	5	21.6	1	1	4	21.5	1	1	3	4	20.0
800	1	2	5	25.3	1	1	4	24.6	1	1	3	5	23.0
900	1	2	5	29.0	1	2	3	27.7	1	1	4	5	26.0
1000	..	..	..	..	1	2	3	30.9	1	1	4	7	28.0
1100	..	..	..	..	1	2	3	35.0	..	..	..	..	..
1200	..	..	..	..	..	..	..	..	..	..	..	..	..

Source: System Level Reports: See Appendix II.

[a] Total teacher numbers are derived from Table 5.1; the notes from that table also apply here.

[b] Where no classification was given by systems for specialist teacher positions, it has been assumed that they are equivalent to assistant class teachers. Classification nomenclature employed by the systems and their equivalents to the terms employed in this table are given in Appendix II.

[c] Assistants with Responsibility Allowances.

Table 5.7(b) Formula Allocation of Teachers to Primary Schools. Classification of Teachers, Queensland, South Australia and Western Australia, 1980[ab]

	Queensland				South Australia				Western Australia			
Enrolment	Prin.	Deputy prin.	Senior teacher	Assts	Prin.	Deputy prin.	Senior teacher	Assts	Prin.	Deputy prin.	Senior teacher	Assts
25	-	-	-	1.0	-	1	-	1.3	-	-	-	1.8
50	-	1	-	1.0	-	1	-	1.4	-	1	-	1.2
100	-	1	-	3.0	-	1	-	3.6	1	-	-	4.3
200	1	-	-	6.0	1	1	-	7.4	1	-	-	8.6
300	1	-	-	10.0	1	1	-	11.9	1	2	-	9.7
400	1	-	-	16.6	1	1	-	16.0	1	2	-	14.0
500	1	-	-	19.6	1	1	-	20.2	1	2	-	18.4
600	1	-	-	21.6	1	2	-	23.2	1	2	-	23.0
700	1	1	1	25.6	1	2	-	27.0	1	2	-	26.0
800	1	1	1	28.6	1	2	-	30.8	1	2	-	19.4
900	1	1	1	33.6	1	2	-	34.7	n.a.	n.a.	n.a.	n.a.
1000	1	1	1	36.6	1	2	-	38.5	n.a.	n.a.	n.a.	n.a.
1100	1	1	2	39.6	..	..	..	..	n.a.	n.a.	n.a.	n.a.
1200	1	1	2	42.6	..	..	..	..	n.a.	n.a.	n.a.	n.a.

Source: System Level Reports: see Appendix II.

[a] As for Table 5.7(a).

[b] As for Table 5.7(a).

Table 5.7(c) Formula Allocation of Teachers to Primary Schools. Classification of Teachers, Tasmania and New Zealand, 1980[ab]

Enrolment	Tasmania				New Zealand (Full & contributing)				New Zealand (Intermediate)				
	Prin.	Deputy prin.	Senior teacher	Assts	Prin.	Deputy prin.	Senior teacher	Assts	Prin.	Deputy prin.	Senior teacher	Specialist teachers	Assts
25	-	-	-	1.0	-	-	1	-	..	..	..	..	..
50	-	-	1	1.3	-	-	1	1.0	..	..	..	..	..
100	-	1	-	3.3	-	-	1	3.0	..	..	..	..	..
200	-	1	1	6.5	-	1	2	4.0	-	1	2	2	4.0
300	I	-	2	9.8	-	1	2	6.7	-	1	2	2	6.7
400	I	2	1	13.6	1	-	3	8.9	1	-	3	3	8.9
500	1	2	2	16.8	1	-	4	11.1	1	-	4	5	11.1
600	I	2	3	19.9	1	-	5	13.4	1	-	5	5	13.4
700	I	2	4	23.2	1	2	5	14.6	1	2	5	5	14.6
800	I	2	5	26.3	1	2	5	17.8	1	2	5	5	17.8
900	I	2	6	29.3	1	2	5	21.0	1	2	5	5	21.0
1000	..	..	..	..	..	..	..	..	..	..	..	..	..
1100	..	..	..	..	..	..	..	..	..	..	..	..	..
1200	..	..	..	..	..	..	..	..	..	..	..	..	..

Source: System Level Reports: See Appendix II.

[a] As for Table 5.7(a).

[b] As for Table 5.7(a).

Table 5.8 Formula Allocation of Teachers to Primary Schools. Ratio of Assistants to Promotion Positions, Australia and New Zealand 1980

Enrolment	ACT	NSW	Vic.[a]	Qld	SA	WA	Tas.	New Zealand Full and contributing	New Zealand Intermediate
25	-	-	-	-	1.3	-	-	-	..
50	1.5	1.0	-	1.0	1.4	1.2	1.3	1.0	..
100	3.8	3.2	-	3.0	3.6	4.3	3.3	3.0	..
200	3.1	3.3	3.5	6.0	3.7	8.6	3.3	1.3	1.8
300	2.5	4.9	5.5	10.0	5.9	3.3	3.3	2.2	1.3
400	2.0	4.3	4.7	16.6	8.0	4.7	3.4	2.2	1.7
500	2.2	3.8	6.0	19.6	10.1	6.1	3.4	2.2	2.0
600	2.7	3.7	4.0	21.6	7.7	7.7	3.3	2.2	2.1
700	2.7	3.6	4.8	8.5	9.0	8.7	3.3	1.8	2.5
800	3.2	4.1	5.6	9.5	10.3	9.8	3.3	2.2	2.9
900	3.6	4.6	5.2	11.2	11.6	n.a.	3.3	2.6	3.3
1000	..	5.2	5.8	12.2	12.8	n.a.	..	..	..
1100	..	5.8	..	9.9	..	n.a.	..	..	..
1200	..	..	..	10.7	..	n.a.	..	..	..

Source: Tables 5.7(a), (b) and (c).

[a] Assistants with Responsibility included in the Assistants category.

A third observation which can be made on the basis of Tables 5.7(a), (b) and (c) concerns the distribution of deputy principal positions in the eight education systems. In New South Wales, Queensland and South Australia at least one teacher with a classification equivalent to that of deputy principal is appointed to relatively small schools. In the remaining systems the deputy principal classification does not operate until the school reaches a considerably higher enrolment. Fourthly, there is some variation between the systems in the proportion of assistant class teachers in schools of varying size. An index of this proportion can be developed by using Tables 5.7(a), (b) and (c) to calculate the ratio of assistant class teachers to promotion positions at each enrolment level as in Table 5.8. The ratio of assistant class teachers to teachers in promotion positions varies considerably between the systems. However, it is common amongst the systems for the ratio to be positively related to school size.

Another aspect of the configuration of a school staff that may be revealed by the staffing schedules is the mix of subject specialists amongst the teachers. At the primary school level the major areas of teacher specialization are normally taken to comprise librarianship, music, physical education and art. Care needs to be exercised in examining the staffing schedules however when attempting to determine the school size at which such teachers are normally appointed to schools. This need for care arises from the fact that simply because a staffing schedule makes no mention of specialist teachers, it does not necessarily mean that such teachers are not appointed to schools. As a general rule, one would expect that the smaller the number of specialist teachers who are available to be appointed to schools, the more likely is the staffing schedule to seek to ration them

Table 5.9 Balance of Specialist and Other Teachers, Government Primary Schools of Australia and New Zealand, 1979. Expressed as Mean Numbers of Staff Per 1000 Students

	Enrolment range	Specialist[a] teachers	Other teachers	Total teachers
Australian Capital Territory	<150	0	62	62
	150-599	6	43	49
	≥600	4	43	47
New South Wales	<150	2	44	46
	150-599	5	40	45
	≥600	4	38	42
Victoria	<150	2	55	57
	150-599	9	41	50
	≥600	7	38	45
Queensland	<150	0	43	43
	150-599	6	42	48
	≥600	5	36	41
South Australia	<150	1	53	54
	150-599	6	44	50
	≥600	5	41	46
Western Australia	<150	1	51	52
	150-599	4	37	41
	≥600	5	37	42
Tasmania	<150	2	46	48
	150-599	6	44	50
	≥600	4	44	48
New Zealand (full primary)	<150	0	45	45
	150-599	2	38	40
	≥600[b]	..	..	..
New Zealand (contributing primary)	<150	0	38	38
	150-599	1	40	41
	≥600	1	43	44
New Zealand (intermediate)	<150[c]	..	..	..
	150-599	13	39	52
	≥600	8	39	47

Source: Ainley (1982).

[a] Specialist teachers include teacher-librarian, career/guidance teacher, remedial teacher, migrant/ethnic education teacher, and other specialist teachers such as art, music, and physical education.

[b] No full primary schools with more than 600 students were included in the sample.

[c] No intermediate schools with less than 150 students were sampled.

according to school size. This consideration leads to the view that to document the relative configuration of specialist teachers in the eight education systems, it is preferable to turn to a data source other than the staffing schedules. This is done in Table 5.9 which shows the number of specialist teachers per 1000 students for schools of varying enrolment sizes in the eight education systems. The data for this table were derived from the survey of school resources reported in the companion volume (Ainley, 1982).

The data in Table 5.9 reveal some interesting patterns in teacher allocation policies between the eight education systems. It would appear that the intermediate schools of New Zealand support the highest proportion of specialist teachers, which is not altogether surprising because the expressed objective of such schools is to provide opportunities for students to participate in a broad range of subject areas. Amongst the other systems, Victorian primary schools reported the highest proportion of specialist teachers on their school staff. The relatively high number of specialist staff in Victorian primary schools could help to explain the fact while student-teacher ratios are relatively favourable in these schools, the differences between the average class size of Victorian schools and those in the other systems is not as great as one may have expected (Ainley, 1982).

Across the eight systems there is a broadly uniform pattern evident in the balance of specialist teachers according to school size. In the relatively small primary schools, few, if any, specialist teachers are appointed which implies that teachers in these schools are engaged in a wider range of teaching functions than are teachers in larger schools. There is in general a slightly higher proportion of specialist teachers in the medium sized primary schools than in primary schools with more than 600 students.

Teacher Configurations in Secondary Schools

The seniority configurations of teachers in the secondary schools of the eight education systems are shown in Tables 5.10(a), (b) and (c). Almost without exception, secondary schools with even the relatively small enrolment of 200 students, have appointed to them some staff with a classification equivalent to principal, deputy principal, and senior teacher, and this basic core of senior staff is maintained as school enrolment increases. The general pattern as school size rises is to appoint additional senior teachers and in some systems at least one additional teacher who can be categorized as the equivalent of a deputy principal. The major exception to this pattern is in the Australian Capital Territory where 12 teachers in promotion positions are appointed to secondary schools at all points of the enrolment range. This policy could be related to the relatively small range of enrolment sizes in the secondary schools of the ACT that was noted in Chapter 3.

Overall, it is apparent that much less diversity is evident in the seniority configurations of secondary schools, either within the same education system or between education systems, than was found to be the case for primary schools. This high degree of uniformity in the seniority configurations of secondary schools could relate to the relatively smaller dispersion in the size of secondary schools within an education system, and to a high degree of implicit agreement between the education systems as to the

Table 5.10(a) Formula Allocation of Teachers to Secondary Schools. Classification of Teachers, Australian Capital Territory and New South Wales, 1980[ab]

	ACT High Schools				ACT Colleges				NSW High Schools			
Enrolment	Prin.	Deputy prin.	Senior teacher	Assts	Prin.	Deputy prin.	Senior teacher	Assts	Prin.	Deputy prin.	Senior teacher	Assts
200	..	..	..	..	..	..	..	..	1	1	4	14.0
300	1	3	8	14.1	..	..	..	..	1	1	4	20.7
400	1	3	8	18.0	..	..	..	..	1	1	4	26.6
500	1	3	8	26.0	1	3	8	34.8	1	1	4	30.7
600	1	3	8	32.0	1	3	8	42.5	1	1	6	33.4
700	1	3	8	37.9	1	3	8	50.6	1	1	6	38.0
800	1	3	8	44.0	1	3	8	58.6	1	1	6	45.4
900	1	3	8	50.3	1	3	8	66.7	1	1	7	50.5
1000	1	3	8	56.3	..	..	..	..	1	1	7	55.2
1100	..	..	..	..	..	..	..	..	1	1	9	58.1
1200	..	..	..	..	..	..	..	..	1	1	9	62.9
1300	..	..	..	..	..	..	..	..	1	1	9	68.4
1400	..	..	..	..	..	..	..	..	1	1	9	73.4
1500	..	..	..	..	..	..	..	..	1	1	9	81.1

Source: System Level Reports: see Appendix II.

[a] Total teacher numbers derived from Table 5.4; the notes from that table also apply here.

[b] Where no classification was given by systems for specialist teacher positions, it has been assumed that they are equivalent to assistant class teachers. Classification nomenclature employed by the systems, and their equivalents to the terms employed in this table are given in Appendix II.

Table 5.10(b) Formula Allocation of Teachers to Secondary Schools: Classification of Teachers, Victoria, Queensland and South Australia, 1980[ab]

	Victorian High Schools[c]					Queensland				South Australia			
Enrolment	Prin.	Deputy prin.	Senior teacher	Assts[d] (R)	Assts	Prin.	Deputy prin.	Senior teacher	Assts	Prin.	Deputy prin.	Senior teacher	Assts
200	n.a.	n.a.	n.a.	n.a.	n.a.	1	-	1	16.0	1	-	3	14.7
300	1	1	3	6	15.0	1	1	4	18.0	1	1	4	19.0
400	1	1	4	7	18.6	1	1	4	24.0	1	1	6	24.0
500	1	1	4	8	23.1	1	1	4	30.0	1	2	6	29.7
600	1	1	4	8	28.7	1	1	5	35.0	1	2	7	35.0
700	1	1	5	10	31.2	1	1	7	38.0	1	3	8	39.2
800	1	1	5	10	36.8	1	1	8	43.0	1	3	9	44.1
900	1	1	6	11	40.3	1	1	8	49.0	1	3	10	48.9
1000	1	1	6	12	44.9	1	1	8	54.0	1	3	11	53.8
1100	1	1	8	13	47.4	1	1	10	58.0	1	3	12	58.7
1200	..	..	..	..	..	1	1	11	62.0	1	3	13	63.6
1300	..	..	..	..	..	1	2	11	67.0	1	3	15	67.5
1400	..	..	..	..	..	1	2	15	68.0	1	3	16	72.3
1500	..	..	..	..	..	1	2	15	73.0	..	..	..	..

Source: System Level Reports: see Appendix II.

a As for Table 5.10(a).

b As for Table 5.10(a).

c Data for Technical Schools not available.

d Assistants with Responsibility.

Table 5.10(c) Formula Allocation of Teachers to Secondary Schools. Classification of Teachers, Western Australia, Tasmania and New Zealand, 1980[ab]

Enrolment	Western Australia				Tasmania				New Zealand			
	Prin.	Deputy prin.	Senior teacher	Assts	Prin.	Deputy prin.	Senior teacher	Assts	Prin.	Deputy prin.	Senior teacher	Assts
200	1	2	4	12.4	..	..	..	..	-	1	3	10.3
300	1	2	4	15.2	1	1	4	15.7	-	1	3	13.9
400	1	2	4	22.9	1	1	6	20.0	1	-	4	19.3
500	1	2	5	25.1	1	2	6	25.5	1	-	4	23.8
600	1	2	6	27.1	1	2	7	30.7	1	1	3	27.8
700	1	2	7	32.1	1	2	8	35.8	1	1	4	31.0
800	1	2	8	37.1	1	2	9	41.0	1	1	4	35.3
900	1	2	8	41.6	1	2	10	46.2	1	1	5	38.6
1000	1	2	9	46.6	1	2	11	51.5	1	1	5	42.8
1100	1	2	10	50.1	..	..	..	..	1	1	6	45.9
1200	1	2	10	53.1	..	..	..	..	1	1	6	50.1
1300	1	2	11	59.6	..	..	..	..	1	1	7	54.3
1400	1	2	11	64.1	..	..	..	..	1	1	7	59.3
1500	..	..	..	..	..	..	..	..	1	3	6	61.5

Source: System Level Reports: see Appendix II.

[a] As for Table 5.10(a).

[b] As for Table 5.10(a).

Table 5.11 Formula Allocation of Teachers to Secondary Schools. Ratio of Assistants to Promotion Positions, Australia and New Zealand, 1980

School enrolment	ACT		NSW	Vic.	Qld	SA	WA	Tas.	NZ
	High	College		High[a]				High	
200	..	..	2.3	n.a.	8.0	3.7	1.8	..	2.6
300	1.2	..	3.5	4.2	3.0	3.2	2.2	2.6	3.5
400	1.5	..	4.4	4.3	4.0	3.0	3.3	2.5	3.9
500	2.2	2.9	5.1	5.2	5.0	3.3	3.1	2.8	4.8
600	2.7	3.5	4.2	6.1	5.0	3.5	3.0	3.1	5.6
700	3.2	4.2	6.3	5.9	4.2	3.3	3.2	3.3	5.2
800	3.7	4.9	5.7	6.7	4.3	3.4	3.4	3.4	5.9
900	4.2	5.6	5.6	6.4	4.9	3.5	3.8	3.6	5.5
1000	4.7	..	6.1	7.1	5.4	3.6	3.9	3.7	6.1
1100	..	..	5.3	6.0	4.8	3.7	3.9	..	5.7
1200	..	..	5.7	..	4.8	3.7	4.1	..	6.3
1300	..	..	6.2	..	4.8	3.6	4.3	..	6.0
1400	..	..	6.7	..	3.8	3.6	4.6	..	6.6
1500	..	..	7.4	..	4.1	..	..	..	6.2

Source: Tables 5.10(a), (b), (c).

[a] Assistants with Responsibility included in Assistants category.

staffing needs of secondary schools, at least in terms of the seniority configuration of teachers.

A high degree of congruence between the systems is also evident in the proportion of assistant class teachers appointed to schools of a given size. This is evident from Table 5.11 which shows the ratio of assistants to promotion positions at each enrolment level. As can be seen from that table, the proportion of assistant class teachers in schools of given enrolments does not vary between the systems to the same extent as was the case for primary schools. In general, it is also the case that the ratio of assistant class teachers at each enrolment level is lower in secondary schools than was found for primary schools in the same system. Secondary schools, in other words, have a higher proportion of teachers in promotion positions than do primary schools of the same size. This weighting of seniority positions in favour of secondary schools could reflect a view that secondary schools are more complex organizations than primary schools and therefore necessitate a higher proportion of senior staff. It is rare, for example, to have primary school teachers designated to administer and co-ordinate particular subject areas, a practice that is common to most secondary schools. This does imply however that, other things equal, the teacher salary costs of operating a secondary school will exceed those of a primary school of the same enrolment size. Of course, as has already been noted, when comparing primary and secondary schools, 'things' in general are not equal. Not only do secondary schools enjoy lower student-teacher ratios than primary schools, secondary teachers tend to receive higher salaries than primary teachers of the equivalent classification. These two factors of themselves lead to higher teacher salary costs being associated with secondary schools, a situation which is compounded by the higher proportion of promotion positions entailed in secondary staffing schedules.

When one turns to the mix of subject specialization in secondary schools, the picture is a little less clear than was evident in the case of primary schools. This difference arises because the notion of a specialist teacher as an identifiable staff member probably has less applicability in a secondary school, since in most secondary schools nearly all of the teaching staff would be subject specialists. The notion of specialization which is of greater utility in a secondary school is that of functional specialization. Broadly speaking one could classify secondary teachers as performing one of three functions: general class teaching, administration, and an omnibus category of 'other'. This latter classification would include functions such as that of teacher librarian, counsellor, and career guidance, each of which principally involves dealing with students on an individual basis rather than in a general class teaching situation. It is this category which could most appropriately be thought of as containing specialist teachers in secondary schools and it is in this sense that the term will be used in the following discussion.

The secondary school data generated by the school survey reported by Ainley (1982) are shown in Table 5.12 where the mean number of specialist and other teachers per 1000 students are displayed for three enrolment ranges which approximate small, medium, and large secondary schools. Survey data for New Zealand secondary schools are not presented because these schools did not participate in the school survey. Table 5.12 is not strictly comparable to the specialist primary teacher data shown in Table 5.9 because, although several of the specialist teacher categories were common to both secondary and primary schools, it is likely that the two types of schools would differ in their perceptions of other types of specialist teachers. It is evident that the proportion of specialist secondary teachers varies considerably between the Australian government systems. The proportion of specialist teachers, as defined, is relatively high in Victorian secondary schools and in the small secondary schools of Western Australia. In most systems, there appears to be a clear inverse relationship between the proportion of specialist teachers and school size: as enrolments increase the proportion of specialist teachers declines. This implies that once secondary schools reach an enrolment of about 300 to 400 students, in most systems they are supplied with a reasonably wide range of specialist teachers and that as enrolments increase the number of specialist teachers does not increase proportionately. As such, secondary staffing schedules would appear to recognize a secondary school as being 'whole' at a relatively small enrolment size, a point that is reinforced by the seniority configurations of secondary schools that were discussed above. In other words, once a secondary school reaches an enrolment size of

Table 5.12 Balance of Specialist and Other Teachers, Government Secondary Schools of Australia, 1979. Expressed as Mean Numbers of Staff Per 1000 Students

System	Enrolment range	Specialist[a] teachers	Other teachers	Total teachers
Australian Capital Territory[b]	<450	8	86	94
	450-900	6	73	79
	>900	4	68	72
New South Wales	<450	6	84	90
	450-900	4	69	73
	>900	4	64	68
Victoria (High)	<450	9	92	101
	450-900	9	78	87
	>900	7	68	75
Victoria (Technical)	<450[c]	..	..	..
	450-900	9	105	114
	>900	6	84	90
Queensland	<450	3	79	82
	450-900	4	68	72
	>900	4	65	69
South Australia	<450	7	86	93
	450-900	5	78	83
	>900	5	72	77
Western Australia	<450	10	79	89
	450-900	6	68	74
	>900	5	63	68
Tasmania[b]	<450	6	70	76
	450-900	5	70	75
	>900	5	66	71

Source: Ainley (1982).

[a] Specialist teachers defined as in the text.

[b] Not including senior colleges.

[c] No technical schools with less than 450 students were included in the survey.

about 300 or 400 students, which is relatively small for a secondary school in most education systems, it is supplied with a full range of teachers in terms of seniority and specialization. Above that enrolment point, secondary schools tend to be supplied with 'more of the same' as enrolments rise. As such, the difference between the teaching staff of a small and a large secondary school is principally one of scale. By contrast, the differences between the staffing configurations of small and large primary schools that were noted in the previous section imply that as school size increases in the primary sector, the nature of the teaching staff changes considerably in terms of both the seniority and subject specialization configurations.

The Above-Formulae Allocation of Teachers to Schools

The discussion of teacher allocation policies to this stage has concentrated upon the allocation of teachers to schools via the staffing schedules because of the great importance of the staffing schedules in allocating teachers to schools and the role of the schedules in ensuring equality of resource provision between schools of a similar type and size. Over the past decade there has been an increasing awareness, however, that equality of resource provision may be a necessary but not sufficient condition for the achievement of equity of resource provision. This awareness has been fuelled in large part by the sizeable and growing body of research literature concerned with the effects of social environment upon educational performance (for example, see Husen, 1975). In brief, this research has suggested that, despite attempts to equalize educational resources between schools, levels of educational achievement still vary markedly between students from different socio-economic backgrounds. Such research findings have led to a common acceptance amongst educators that particular schools, which may be termed disadvantaged on the basis of the background of their student populations, need resources additional to those provided by the staffing schedules in order to provide their students with an equitable chance of attaining satisfactory educational performance. In other words, it has been argued that selected schools are deserving of positive discrimination in the allocation of educational resources. In the Australian context, such arguments have been advocated with particular force by the Schools Commission, and have served to guide a number of the programs conducted under the auspicies of the Commission (see Schools Commission 1973, 1975).

In each of the eight education systems it has been accepted that the staffing schedule is best viewed as a minimum entitlement to resources, and each system has made provision for the supply of above-formulae resources to schools. In large part such above-formulae allocations have been guided by assessments of educational disadvantage suffered by particular students and schools. However, this need not necessarily be the only rationale for the above-formulae allocation of resources. For example, schools which have implemented innovative programs that necessitate additional staff members may be allocated such individuals even though the school and its students may not have been judged to be disadvantaged. In instances of this sort the funding authority has made a decision to grant additional resources to the school on the basis of the perceived benefits which may flow to the students directly concerned, as well as the demonstration value to other schools of the innovative program that is to be implemented.

Description of the above-formulae allocation of resources to schools is difficult because of the variety of means which schools may employ to acquire such resources. Until recently for example, it was possible for individual teachers and schools in the

Australian government education systems to apply directly to state-wide committees which disbursed funds for additional resources under the Innovations Program of the Schools Commission. In addition, other programs sponsored by the Schools Commission, such as the Disadvantaged Schools Program and the Country Areas Program, each had the effect of supplying additional personnel and material resources to particular schools. As has already been noted, in Tasmania this process went a little further through the provision to schools by the Education Department of direct access to the general recurrent funds supplied to that State by the Schools Commission (Perchard, 1979). Furthermore, each education authority from its own resources supplies additional personnel and materials to particular schools over and above the minimum entitlements of the staffing and other resource disbursement schedules. In some systems these additional allocations are in response to school submissions to either regional or central authorities, while in others they are derived from direct grants from either of these levels.

Nevertheless, given the importance of such practices in influencing the actual level of resources in government schools, an attempt at acquiring information relating to the above-formulae allocation of resources was considered to be necessary. To this end, each of the systems was asked to provide an estimate of the proportion of the total teaching force who are allocated to schools on an above-formulae basis in order to meet special needs. Not surprisingly, in light of the variety of sources of such additional resources and the range of mechanisms by which schools can acquire an increased allotment of teachers, this request posed a number of difficulties for the systems. The responses of the systems are summarized below.

System Practices

In Victoria, it was estimated that just over 1400 primary teachers and 1000 secondary teachers were allocated to schools in 1979 and 1980 over and above the staffing schedule in order to provide for special needs; these additional allocations represented just under five per cent and seven per cent of the primary and secondary teaching forces respectively. South Australia reported that in 1980, 300 primary and 350 secondary teachers salaries could be considered 'negotiable', that is available to be allocated to schools on a special needs basis; respectively these numbers were equivalent to 3.8 per cent and 5.5 per cent of the primary and secondary government teaching services. In Tasmania, it was reported that a discretionary factor of two per cent was available to the regional authorities in the allocation of primary teachers, and that while no such discretionary provision existed at the regional level for the allocation of secondary teachers, those secondary schools designated as having special needs received an above-formulae allocation of teachers from the Education Department. It was estimated that the proportion of the total secondary teaching service allocated in this manner in

Tasmania would be of the same order as that applying to primary schools, namely about two per cent.

The New Zealand Education Department reported that just over 100 primary teachers were located in notional roll schools who would not otherwise be in such schools according to the staffing formula, and that an additional 220 primary school teachers were allocated to other primary schools on a special needs basis. In sum, these two categories of primary teachers comprised some 1.7 per cent of the total government primary teaching force. The notional roll schools of New Zealand deserve some further comment. These are primary schools which have been designated as containing a high proportion of students from an educationally disadvantaged background. Depending upon an assessment by the education authorities of the special needs of such schools, the student roll number in each school is increased by a further 10, 15 or 20 per cent to a 'notional' roll figure. It is this adjusted enrolment figure to which the normal staffing schedule is applied in order to determine the staffing entitlement of the school. New Zealand secondary schools average a discretionary staffing factor of two additional teachers; in larger secondary schools, the discretionary staffing factor may rise as high as four teachers.

Western Australia reported that a wide variety of teachers were allocated to schools on an above-formulae basis. At the primary school level these include regulation teachers, who are relatively senior teachers appointed to provide professional assistance to their less experienced colleagues, and specialists teachers in the areas of music, art-craft, drama, physical education and language. At the secondary school level it was reported that supplementary staff included teacher-librarians, youth education officers, guidance officers, migrant education teachers, and remedial reading teachers. Of these categories of teachers it was only the youth education officers and the remedial reading and migrant education teachers who were not allocated to schools according to a schedule primarily influenced by enrolment numbers.

New South Wales and the Australian Capital Territory provide interesting contrasts in the allocation of above-formulae teachers to schools. New South Wales maintains separate staffing schedules for normal and disadvantaged schools. The schedule for disadvantaged schools, while still based upon enrolments, allows for a slightly more generous allocation of teachers to disadvantaged schools than to normal schools of the same enrolment size. The magnitude of this additional personnel allowance for disadvantaged government schools in New South Wales can be gauged by comparing the functional form of the disadvantaged schools staffing schedule with the functional form of the normal schedules that were derived earlier in the chapter. Applying the same methodology that was employed in Table 5.1 for the normal schedule, enables a disadvantaged primary schools function of $T = 0.73 + 0.039E$ to be derived which can be compared to the $T = 0.68 + 0.037E$ displayed in Table 5.2 for New South Wales normal primary schools. At an enrolment level of 500 students the differences between these functional forms is equivalent to a disadvantaged primary school receiving an additional five per cent supply of teachers over and above a normal primary school of the same enrolment. In the secondary school sector, the disadvantaged schools schedule can be expressed in the functional form of $T = 10.02 + 0.056E$ which may be contrasted with the function $T = 9.72 + 0.054E$ derived from the normal staffing schedule and displayed in Table 5.5. At a secondary school enrolment of 1000 students, the disadvantaged staffing schedule enables a school to receive an additional 2.5 teachers or just under four per cent of the teaching staff of a normal secondary school of the same size.

The above-formulae allocation of teachers in the Australian Capital Territory was also determined by means of a staffing schedule, but in contrast to New South Wales where the emphasis was upon direct school allocation, the ACT schedule was used to determine a system-wide pool of teachers available for allocation on the basis of special needs. At the primary school level this pool in 1980 stood at 14 teachers for identified purposes and an additional 0.35 remedial teachers per primary school, and further staff allocated to schools which had formed classes containing special education students. Excluding the special education teachers, the two components of the special needs provision in ACT primary schools, namely the system-wide pool and the remedial reading teachers comprised just under 3 per cent of the total ACT government primary schools teaching service. At the secondary school level the size of the system-wide high school needs pool in 1980 was determined by estimating the number of beginning teachers, the number of teachers on study leave, and the number of classes with students identified as slow learners and allocating a proportion of total teaching staff to meet needs arising from these sources. In addition, further staff could be allocated on the basis of special education classes within secondary schools. A similar schedule was used to determine the system-wide needs pool for the college sector, with the exception of the provision for slow learner classes, which was excluded for the colleges. In order to obtain a needs based allocation from the system-wide pool, each secondary school would prepare a submission detailing the eligibility of the school for such allocations on the basis of the criteria outlined above.

In the case of the remaining system, Queensland, it was not possible to obtain detailed data on the above-formulae allocation of teachers to schools. To obtain such data would have necessitated contacting individual primary and secondary school regional inspectors since it is principally at this level that needs-based allocations are determined. This was not feasible.

Overall, it would appear that each of the eight education systems makes provision for the allocation of teachers to schools over and above the minimum entitlements engendered by the staffing schedules, and that while the proportion of teachers so allocated varies between primary and secondary sectors in any one system, and also varies between systems, in general it would not rise above about 10 per cent of the total teaching force allocated to government schools. The principal criterion governing such allocations is an assessment, made at either regional or central level, of the relative educational disadvantage of the students attending particular schools or groups of schools. It is only in the Australian Capital Territory that this assessment procedure and consequent allocation of additional resources reflects the particular configuration of students with learning difficulties in every school. In each of the other systems the basic approach is to allocate additional teaching resources to those schools which are deemed to be disadvantaged because their student population contains a relatively high proportion of educationally disadvantaged students. This difference in approach between the ACT and the other education systems is essentially a reflection of the fact that schools in the ACT would not differ greatly from each other in the proportion of their student populations which come from what may be considered to be disadvantaged backgrounds. In the other education systems, the distribution of the population is such that socio-economic disadvantage tends to be concentrated in particular schools rather than spread evenly (and thinly) amongst schools. As a consequence, more effective use of scarce educational resources in these systems is judged to be achieved by concentrating additional teaching resources upon pockets of disadvantage rather than by spreading these resources fairly evenly amongst schools as occurs in the ACT.

In addition to the distribution of students amongst schools being an important influence upon the efficiency of any program of above-formula allocation of resources to meet special needs, it is also necessary to note that it may be misleading to use the proportion of the total teaching service that is allocated to schools via such policies as a simple index of the extent to which any education system attempts to meet student needs. Simply because system A allocates a higher proportion of its teachers on an above-formulae basis than system B does not necessarily mean that system A is more cognizant of student needs. It could well be that the base staffing formulae of system B supply to schools a higher level of staff than do the staffing formulae of system A. In other words the above-formulae allocation of resources needs to be viewed in conjunction with the formulae allocation. This is reported in the next section.

The Total Allocation of Teachers

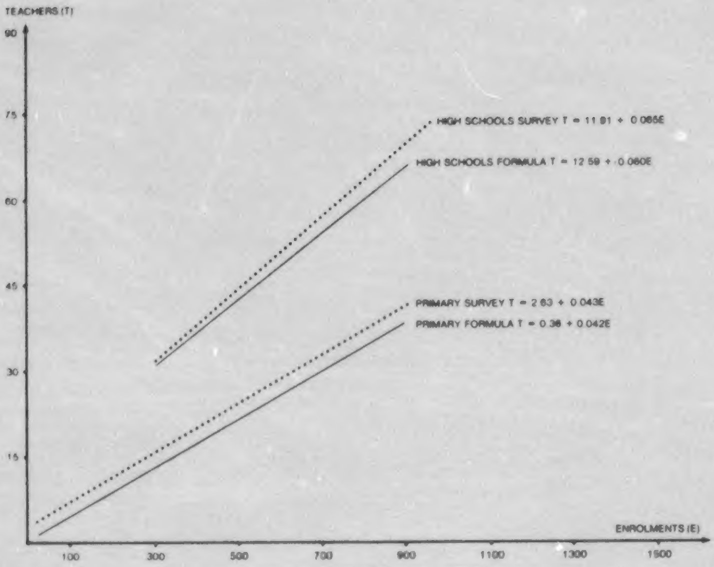
In the previous section an attempt was made to describe the extent to which the education systems make provision for the above-formulae allocation of teachers to schools in response to special needs, and some of the principal forms which such policies take. That discussion was not completely satisfactory for two reasons. First, because of the variety of personnel who may be allocated to schools on a special needs basis, and also because of the wide range of mechanisms for implementing such policies, it was not possible to obtain the necessary data from all systems. Secondly, schools in some systems were able to acquire additional resources from sources other than the Education Department, for example, through some Commonwealth Schools Commission programs, and also through independently raised resources.

This section therefore addresses itself to the question of determining the minimum entitlement of schools to teaching resources as expressed via the staffing schedules, and comparing this level of teaching resources with the level of teaching resources actually in the schools. The difference between these two formulations would therefore represent the acquisition by schools of above-formulae teaching resources, from whatever source. These data are shown in Figures 5.1(a), (b), (c), (d), and (e), where for each system, lines of best fit for the staffing schedules that applied in 1979 are plotted, along with the line of best fit describing the level of teaching resources reported by schools in response to the school survey conducted in 1979 and reported in the companion volume (Ainley, 1982). The two formulations are shown for both the primary and secondary sector of each system with the exception of New Zealand where it was not possible to conduct the survey in secondary schools.

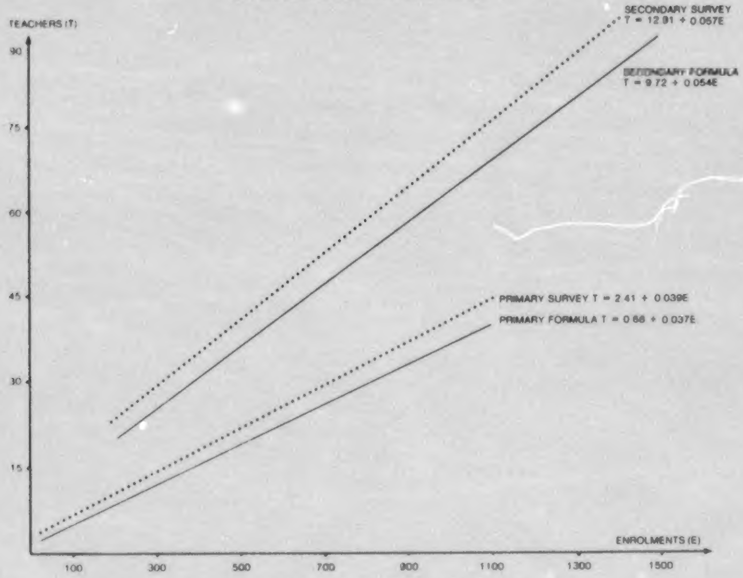
The formulation of the 1979 staffing schedules as a linear equation relating teacher numbers (T) to student enrolments (E) was undertaken in the same manner as the formulation of the 1980 staffing schedules that was described earlier in this chapter and reported in Tables 5.2 and 5.5. It is of some interest to note that between 1979 and 1980 the staffing schedule did not change in most systems, the exceptions being the Australian Capital Territory, Queensland, and the Victorian primary schools sector.

As may have been expected, the five figures show that in both the primary and secondary school sectors of each system the survey line of best fit lies above that derived from the staffing schedule. This indicates that the designation of the staffing schedule as stipulating the minimum entitlement of schools would appear to be correct, and that across the whole enrolment range, schools in each system acquired teaching resources over and above the formulae allocation.

Some care needs to be exercised in interpreting the data displayed in Figures 5.1(a) to (e), particularly with regard to the differences between the survey and formula lines of best fit. There could be several reasons for a difference existing between the two formulations other than the above-formulae acquisition of teaching resources by schools. The first of these is that some mis-specification may have existed in the derivation of either the survey line or the formula line or both. Mis-specification of the formula line is possible because, as was demonstrated in the footnotes to Tables 5.1 and 5.4, in order to derive the formula lines a number of assumptions about the distribution of enrolments and allocation of particular staff categories were necessary in several systems. The validity of these assumptions will influence both the slope and the vertical intercept of the formula functions shown in Figures 5.1(a) to (e). Mis-specification of the survey data is also possible, even though as reported in Ainley (1982), the school



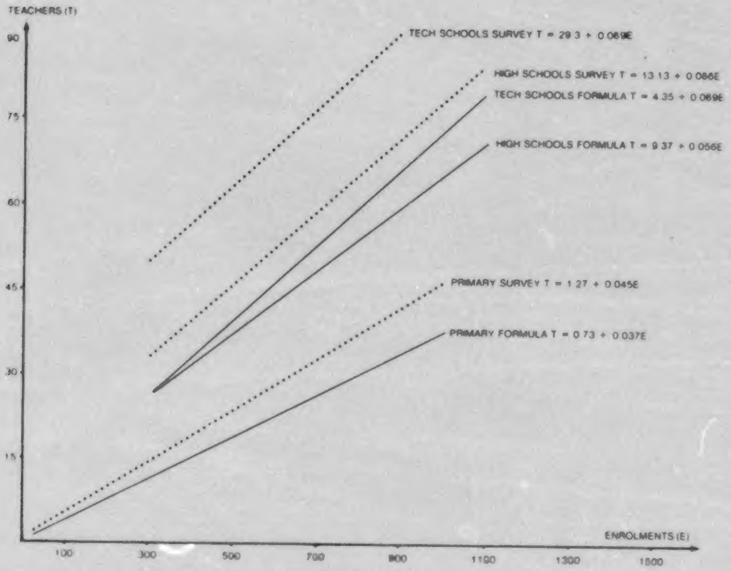
ACT 1979 FORMULA AND SURVEY LINES OF BEST FIT



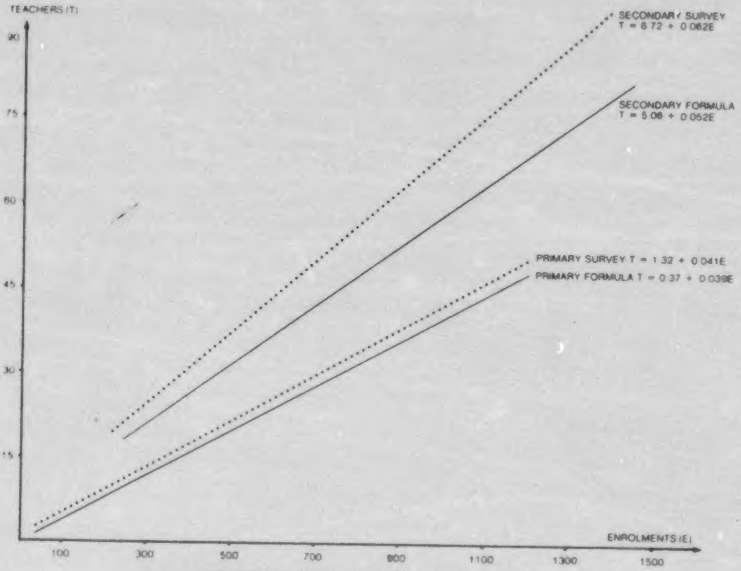
NSW 1979 FORMULA AND SURVEY LINES OF BEST FIT

Figure 5.1(a) Formula and Survey Lines of Best Fit, Australian Capital Territory and New South Wales, 1979.

Source: System Level Reports and Ainley (1982).



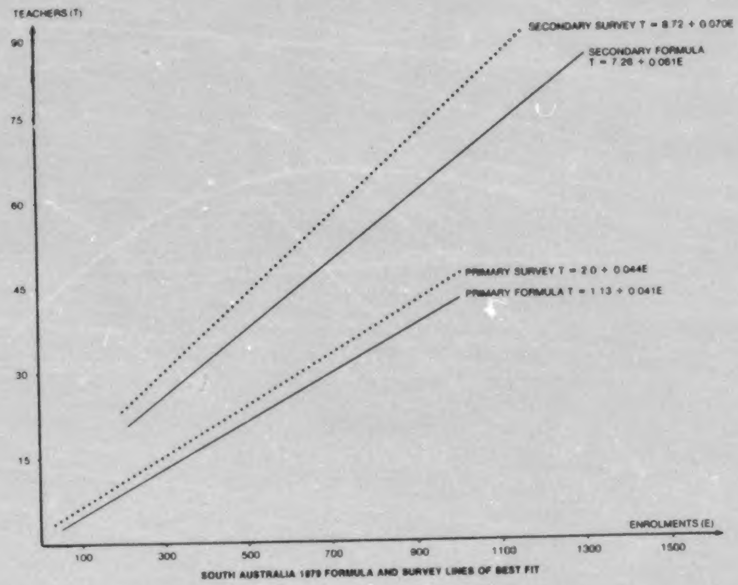
VICTORIA 1979 FORMULA AND SURVEY LINES OF BEST FIT



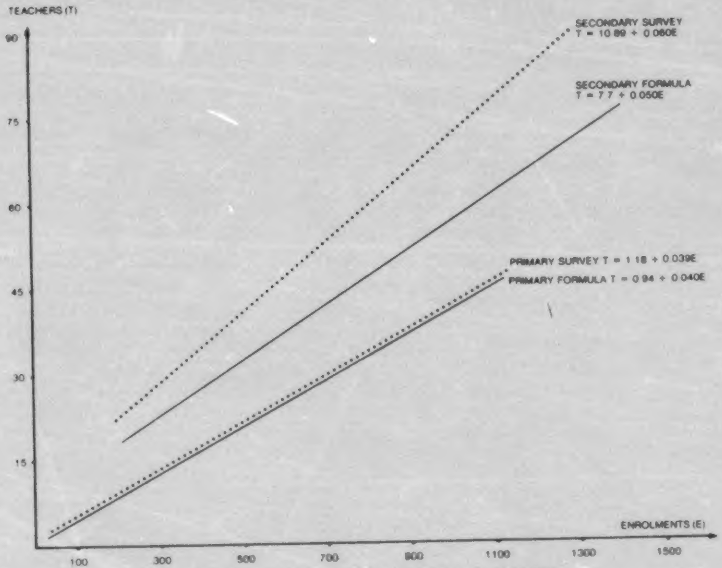
QUEENSLAND 1979 FORMULA AND SURVEY LINES OF BEST FIT

Figure 5.1(b) Formula and Survey Lines of Best Fit, Victoria and Queensland, 1979.

Source: System Level Reports and Ainley (1982).



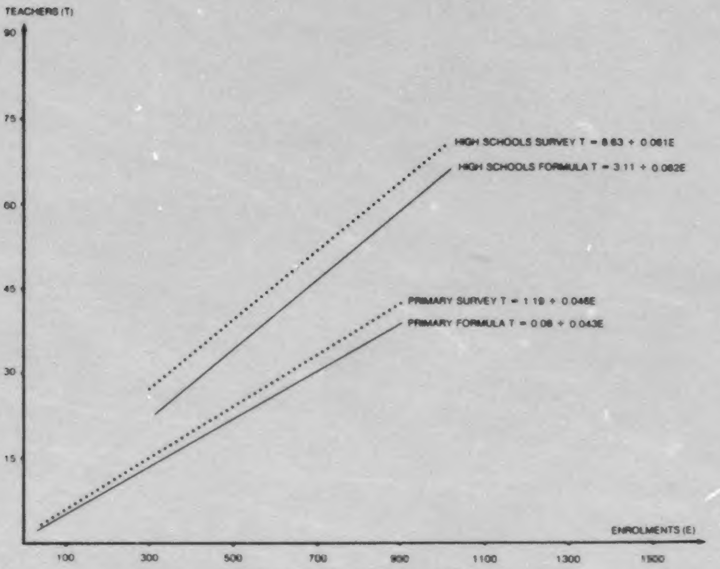
SOUTH AUSTRALIA 1979 FORMULA AND SURVEY LINES OF BEST FIT



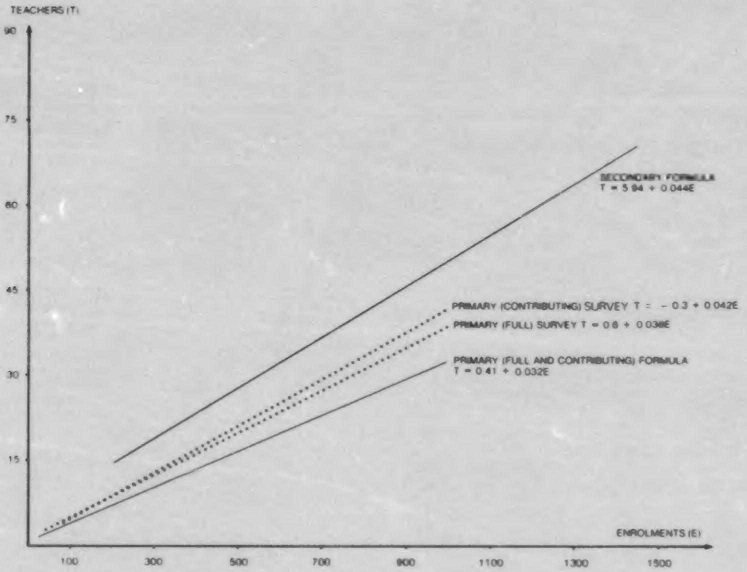
WESTERN AUSTRALIA 1979 FORMULA AND SURVEY LINES OF BEST FIT

Figure 5.1(c) Survey and Formula Lines of Best Fit, South Australia and Western Australia, 1979.

Source: System Level Reports and Ainley (1982).



TASMANIA 1979 FORMULA AND SURVEY LINES OF BEST FIT



NEW ZEALAND 1979 PRIMARY (FULL AND CONTRIBUTING) FORMULA AND SURVEY LINES OF BEST FIT ;

SECONDARY SCHOOLS FORMULA LINE OF BEST FIT

Figure 5.1(d) Formula and Survey Lines of Best Fit, Tasmania and New Zealand, 1979

Source: System Level Reports and Ainley (1982).

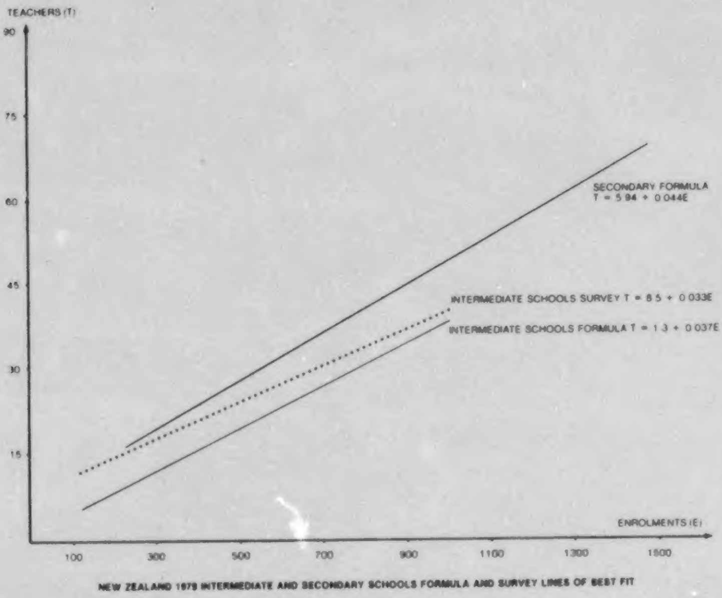


Figure 5.1(e) Formula and Survey Lines of Best Fit, New Zealand Intermediate and Secondary Schools, 1979.

Source: System Level Reports and Ainley (1982).

responses to the survey were carefully checked against central records of school staffing levels. The second potential source of mis-specification of the survey and formulae lines of best fit is a statistical one. The school survey sample comprised up to 50 primary and 50 secondary schools from each system, the schools being selected with a probability proportional to their enrolment. As with any sample survey of this type, the existence of potential biases and sampling errors needs to be acknowledged; these issues are addressed more fully by Ainley (1982). Of possibly greater importance as a source of mis-specification is the technique used to devise the formula lines of best fit for each system. Arbitrary enrolment points of 100, 200 and so on were selected, and the staffing schedules were used to calculate the minimum entitlement of these enrolment sizes; the resultant set of points was used to devise the functional relation between teachers and enrolments. As was noted earlier in the chapter however, these arbitrary enrolment points can lead to some discontinuities in the formula function because the points could lie close to either end of an enrolment range used to calculate a particular staffing entitlement. In addition, because the plotting of points in this form does not reflect the actual size distribution of schools, some weighting of the formula function away from the function occurring in practice may be expected. Despite these potential sources of mis-specification of the formula and survey lines of best fit shown in Figures 5.1(a) to (e), they represent reasonable approximations of the functions which apply in practice, and that bearing in mind the qualifications cited above, they provide a useful basis for discussion.

To guide this discussion, it is helpful to quantify the relationship between the number of teachers allocated to a school of a given size through the staffing schedule, and the number of teachers actually located at the school. This can be done by expressing the number of teachers given by the staffing schedule as a proportion of the actual number of teachers indicated by the survey data. For example, in the ACT, the 1979 staffing schedule indicated that a primary school of 403 students (which represents the 1979 average primary school size in the ACT) was entitled to a minimum of 17.3 teachers. The survey data showed that in fact an ACT primary school of that size was, on average, allocated some 20.0 teachers in 1979. As a proportion of the actual school allocation therefore, the minimum entitlement of teachers represented 87 per cent. Using a similar procedure it can be shown that the corresponding proportion for an ACT primary school with one-half of the 1979 average school enrolment was 78 per cent, and for a school with twice the 1979 ACT primary school average enrolment, the proportion was 92 per cent. These data along with the corresponding data for the other Australian government school systems are shown in Table 5.13.

Table 5.13 implies that in all systems, account is taken of individual school characteristics in the allocation of teaching staff. For example, if we concentrate on the average sized primary school in each system, Table 5.13 shows that (with the exception of Western Australia) the proportion of staff located at the school who have been allocated by the staffing schedule ranges from about 80 per cent in Victoria to 89 per cent in South Australia. For the average sized secondary school in each system the range is a little wider: from about 81 per cent in Western Australia to about 95 per cent in the ACT.

There are several factors which may explain the difference between the number of teachers allocated to schools via the staffing schedules and the number of teachers actually located in the schools. First, as noted above, there are a number of potential sources of mis-specification in both the formula and survey lines of best fit which may result in either, or both, of these formulations not corresponding exactly with actual practice. Secondly, in several systems the staffing schedules that were utilized to derive the formula line of best fit can be considered as representing the absolute minimum entitlements of schools to teachers. In such systems a number of other categories of teachers, although not specified on the staffing schedules, would in practice be allocated to most schools on a formula basis. In other words, the formulae lines of best fit utilized in Figure 5.1(a) to (e) may understate the actual formulae that apply. Thirdly, the survey data on teacher numbers included teachers classed as reserve or in excess. Such

Table 5.13 Relation Between School Enrolment and the Proportion of Teachers Allocated by Staffing Schedules. Australian Government School Systems, 1979

	Primary		Secondary[b]	
System	Enrolment[a]	Proportion of teachers from schedule %	Enrolment[a]	Proportion of teachers from schedule %
Australian Capital Territory	202	78.2	331	97.1
	403	86.6	662	95.2
	806	91.8	1324	93.9
New South Wales	148	75.2	401	87.7
	295	83.3	801	90.4
	590	88.6	1602	92.3
Victoria	111	77.2	296	79.4
	221	79.7	592	81.5
	442	80.7	1184	82.9
Queenslandd	116	80.5	368	81.9
	231	86.9	736	82.8
	462	90.8	1472	83.3
South Australia	161	85.1	361	86.1
	321	88.7	721	86.6
	642	90.8	1442	86.8
Western Australia	127	98.2	381	79.3
	254	100.1	761	80.9
	508	101.3	1552	82.0
Tasmania	116	77.7	309	81.0
	231	84.7	618	89.4
	462	88.9	1236	94.9

Sources: Average enrolment data from Table 3.6; teacher numbers data from Figures 5.1(a) to 5.1(d).

[a] The enrolment figures respectively represent for each system one half of the average school enrolment; the average school enrolment; and twice the average school enrolment.

[b] In the ACT, Victoria and Tasmania the secondary school data are for high schools only.

teachers are not included in the staffing schedules of most systems. Fourthly and most importantly, as indicated earlier each system allows for the needs of individual schools in the allocation of certain categories of teachers. Some of the factors influencing such allowances can be gauged by an examination of the relative weighting of primary and secondary schools, and between different sized schools.

As Table 5.13 shows, in the majority of systems, it is the primary schools which appear to receive a relatively larger proportion of their teachers on an above-formulae basis. The second feature of Table 5.13 is that, almost without exception, it is the smaller schools in each sector which seem to receive a higher proportion of their teaching staff on an above-formulae basis. The apparently proportionately greater allocation of above-formulae teaching staff into primary schools relatively small schools would appear to have a clear needs basis. In the case of primary schools, it would have the effect of narrowing the resource gap between primary and secondary schools indicated by the basic staffing schedules. In regard to relatively small schools it would be a recognition that smaller schools have less opportunity to offer a variety of programs and accordingly need proportionately greater resources in order to offer adequate opportunities to students.

It is likely that in the future, above-formulae teacher allocation will grow in importance as a proportion of the total staffing level of the average government school. As schools are accorded greater responsibilities for curriculum development and are increasingly called upon to cater for individual student needs, inter-school differences in educational programs are likely to be more marked. In such circumstances the demands of schools for individual consideration in staffing allocation decisions will grow.

The Allocation of Support Staff to Schools

In Chapter 4 data were presented which showed the locational and functional distribution of the total number of people employed by the government education systems. These data indicated that the substantial minority of school-based employees were not teachers but rather were supporting the work of the teachers through jobs encompassing teacher aides, library and laboratory assistants, and clerical and administrative positions. In the Australian government education systems in 1979, about 10 per cent of school-based personnel could be classified in these categories. Description of the mechanisms for appointing support staff to schools and the schedules which operate is more difficult than was the case for teachers for three main reasons. First, in most systems the allocation of particular categories of support staff is less dependent upon total school enrolments than is the allocation of teachers. For example, in several systems the appointment of aides for subjects such as science, home economics and needlework is related to the number of classes in those particular subject areas rather than to total school enrolments. As a consequence, to determine the numbers of such people allocated to a school necessitates a closer knowledge of individual school characteristics than is revealed by system-level data. Secondly, as detailed at the beginning of this chapter such staff can come to be located in schools by a variety of means. Thirdly, there is the difficulty of aggregating quite disparate categories of support staff. Problems of aggregation also occur with teaching staff of different classifications, but it is more meaningful to discuss the student-teacher ratio in a school than it is to discuss the student-aggregate ancillary staff ratio. This distinction arises because the definition of a teacher that has been employed throughout this report is based upon criteria which permit the people so classified to be used in a class teaching situation should the school wish. By contrast, the employment terms and conditions of ancillary staff tend to be more rigid and therefore the interchange of duties amongst some categories of ancillary staff is, in the main, not possible.

The difficulty of comparing ancillary staff levels and configurations on the basis of system-level allocative formulae is particularly acute in those systems which do not allocate numbers of designated ancillary staff to schools on the basis of enrolment, but rather, allocate to the school either a number of ancillary staff hours or an ancillary staff budget, and devolve to the school the responsibility for determining the configuration of ancillary staff to be employed. South Australia and New Zealand each devolve responsibility for ancillary staff configurations to the school, and a modified form of such devolution operates in sectors within several other systems.

Despite all of these qualifications, several reasonably clear patterns emerge from the ancillary staff schedules which operate in the eight systems. First, while in all systems the number of ancillary staff allocated to schools increases as enrolments rise, this increase is not directly proportional to enrolments. Relatively small schools are supplied with proportionately more ancillary staff than are larger schools of the same type in the same system. The major exception to this occurs with primary schools with less than about 100 students, since in most systems, such schools are not supplied with any ancillary staff. In some systems this weighting of ancillary staff towards smaller schools is offset to a degree by a change in the nature of the ancillary staff as school size increases. For example, in Victorian secondary schools the position of clerical assistant has four graduations, and the most senior of these staff are only appointed to schools with more than 1000 students, whereas the lowest paid category of clerical assistant can not be employed in secondary schools with more than 400 students. As well as some categories of ancillary staff being at a more senior level in the larger schools in some systems, it is also the case that in some instances the categories themselves differ between small and larger schools. For example, Queensland secondary schools are only eligible for the appointment of an Administrative Officer once enrolments reach 1000 students. Similarly, in the Victorian primary sector, schools with an enrolment of 500 or more are eligible for the appointment of a clerical assistant, whereas an enrolment below this level only entitles the school to the appointment of a part-time typist. Such changes in the configuration of ancillary staff as school size increases have implications not only for the division of labour in schools, but also for the per pupil costs of operating the schools. On the one hand, the less than proportionate increase in ancillary staff numbers as enrolments increase will tend to lower per pupil operating costs, but on the other the higher salary bill associated with the more senior ancillary staff configuration evident in many schools will tend to offset this.

A second general comment which can be made with regard to the distribution of ancillary staff is that in each system the secondary schools tend to be allocated a larger number of ancillary staff, and a more specialized configuration of such staff than are primary schools of equivalent size. Most secondary schools for example, receive a laboratory assistant, an ancillary staff classification that is not evident in the primary schools of any system. The relatively more extensive allocation of ancillary staff to secondary schools presumably is a reflection of the more complex and specialized programs that secondary schools tend to offer when compared to primary schools. The more extensive allocation of ancillary staff to secondary schools is a further factor leading to the relatively higher per pupil operating cost of secondary schools. The actual numbers and types of ancillary staff located in schools are reported in the companion volume (Ainley, 1982).

It is also evident from the ancillary staff schedules that South Australia and New Zealand approach the allocation of ancillary staff in a different manner to that adopted in the other education systems. These two systems have devolved a considerable degree of responsibility to the schools for determining the configuration of ancillary staff within a total allocation of ancillary staff based essentially upon the size of the enrolment and the teaching force of the school. Since, as was shown by data reported by Ainley (1982), considerable diversity appears to exist between schools in the one system concerning desirable alternative configurations of personnel, including ancillary staff, policies of this sort would seem to be worthy of further investigation.

In Conclusion

This chapter has been concerned with the level and configuration of the teachers and other personnel resources in the government schools of Australia and New Zealand. The great majority of these resources are allocated to schools on the basis of staffing schedules which stipulate the minimum entitlements of schools of various enrolment levels. The minimum entitlements are framed in terms of teacher numbers, and in most sectors in most systems, the schedule also stipulates the seniority and subject specialization of the teaching staff. The major exceptions to this are in relation to the allocation of ancillary staff. In several systems, the schools have considerable autonomy in determining the configuration of ancillary support staff which is most appropriate to their needs.

The teaching and ancillary staff schedules ensure that within any one sector, schools of a similar size have equal access to personnel resources. It has been recognized in all systems, however, that equity in resource provision may necessitate the provision of additional resources to particular students and particular schools. While the systems may vary in the mechanisms by which special needs are determined, and while the proportion of the total personnel resources available to be allocated in this manner also varies between systems, the resource allocation policies of all systems reflect the principle of positive discrimination in favour of disadvantaged students and schools.

If the trend towards greater school autonomy in curriculum and administrative matters that has been evident in most systems over the 1970s gathers pace in the future, it is likely that systems will face pressure from schools for differentiated staffing responses. These pressures, which will be additional to those based upon special needs arising from educational disadvantage, are likely to arise where schools have greater freedom to develop education programs suited to the particular needs of their students. In such circumstances, the challenge for system administrators will be to devise allocative mechanisms which can engender a diversity of educational programs between schools, without sacrificing the equality of resource provision which is provided for by the staffing schedules.

CHAPTER 6

THE OPERATING COSTS OF GOVERNMENT SCHOOLS

The Role of Cost Studies in Education

In a time when government expenditure on schools is facing a growing range of pressures, a common response is to turn to economic analysis for assistance in designing policies which may make a more effective use of the education budget. Despite the potential applicability of economic analysis to many forms of resource allocation decisions in education, the history of the involvement of economists in educational policy making is not a particularly long one. Those studies that have been undertaken have been principally of two types, namely cost studies and educational production function analyses. The cost studies have been generally concerned with attempts to calculate the relative financial costs (usually on a per pupil basis) of conducting various types of educational institutions and/or different courses within such institutions. Amongst other matters, such studies have attempted to identify gross differences in the levels of funding for different institutions, the costs of expanding student enrolments, and whether or not there are significant reductions in per pupil costs associated with larger institutions.

It is important to realise that cost studies in education are of limited value unless account is also taken of the effects upon students of the resources which are costed. A study which shows only that schools differ significantly in the per pupil costs of instruction gives little assistance to those responsible for resource allocation policies. Without additional evidence, some could claim that the school with comparatively high per pupil costs is relatively inefficient, and therefore provides no model for resource allocation, while others could interpret the high per pupil costs as an index of the high quality of schooling. In practice, in the government school sector in particular, it is more likely that widely differing per pupil costs of instruction between schools are more a reflection of different resource allocation policies than of any major differences in efficiency between schools. Evidence is required on the relative effects of the different educational resources as well as the financial costs of the resources before appropriate policies can be formulated. In short, for many resource allocation decisions in education, cost studies are a necessary but not sufficient step.

The Measurement of School Costs

The measurement of the costs of alternative allocation policies while conceptually more straightforward than the measurement of the outcomes of schooling, is not, without its own share of difficulties. The first question that needs to be resolved is which elements of the total financial costs of schooling (the capital costs of providing the schools, the recurrent costs of operating the schools, the fees and expenses incurred by parents, and the income foregone by those students of employable age) should be included. From the perspective of the education authorities the relevant costs are those for which they are directly accountable, namely the capital and recurrent costs of providing and operating schools. In regard to existing schools it is the recurrent costs of operating those schools that occupy the largest proportion of education budgets. Furthermore, the resources which represent those recurrent expenditures are those resources which are relatively more amenable to reallocation both within schools and between schools, at least in the medium term. It could also be expected that the resources represented by the capital costs of existing schools would have less impact upon the outcomes of schooling than the resources accounting for recurrent expenditure. In summary, the cost elements of greatest concern to this study are the relative recurrent costs of operating different schools.

The recurrent operating costs of schools can be classified as personnel or non-personnel related. Because of the particular focus of this study upon personnel allocation policies, the following discussion is primarily concerned with estimating the personnel costs of operating schools. Accordingly, little reference is made to the costs of the annual grants to schools for items such as books, teaching materials, and equipment. Similarly, the costs incurred by schools for services such as electricity, heating, postage and so on, are also excluded.

At the level of the school, personnel costs comprise the salary and salary-associated costs of the teachers and support staff working in the schools. Salary-associated costs incurred by the education systems include items such as superannuation payments, workers compensation premiums, payroll tax, and provision for leave. In those systems where all of these costs have to be borne by the employing authority, the net effect, depending upon the level of the costs, would be that the education system is liable to incur personnel costs at least 10 per cent and in some instances up to 20 per cent over and above the total level of direct salary costs. In the analysis which follows, personnel costs other than salary costs are excluded because detailed data on the level of such costs were difficult to obtain. This omission means that the salary cost data which are presented later in this chapter are an understatement of the actual level of personnel costs incurred by the education systems. It has not been possible to obtain sufficiently detailed ancillary staff salary data from all systems for cost data relating to these personnel to be included in the analysis.

It should be noted that the teacher salary cost data which follow are an understatement of the actual level of personnel costs in a more fundamental way than that just cited. The relations between salary costs and school enrolments that are developed in this chapter are based not upon the actual level of teacher salary costs associated with particular schools, but are derived from the teacher staffing schedules elaborated in the previous chapter. As was also noted in that chapter, in each system the level of teacher numbers in many schools exceeds the minimum entitlements given by the staffing schedules. The decision to use the staffing schedules rather than the school survey data to derive salary costs was taken for three main reasons. The first of these was pragmatic and related to doubts that the survey responses of some 600 schools spread across eight different education systems employing different personnel nomenclature could be obtained in a sufficiently detailed manner to enable accurate costing. In addition, it was felt that to seek actual salary data from schools via the school survey could have adversely affected the response rate. An alternative source of data on the levels of staff in schools and their actual salaries, namely the records held centrally, were not available for all systems. The second reason why the staffing schedules rather than the survey data were used to derive recurrent operating costs was that use of the staffing schedules controls for the idiosyncratic variation between schools in factors which may effect teacher salary costs. Thirdly, it was considered that it is the cost implications of the staffing schedules which are most pertinent for policy decisions since the schedules represent the minimum staffing entitlement of schools of different sizes. As an example, where systems are attempting to assess the cost implications of declining enrolments it is the minimum teacher entitlements of the schools (as reflected in the staffing schedule) which sets the lower boundary of the cost issues concerned with the enrolment change. It is this lower boundary which is the most concrete indicator of the cost implications of such changes since it is not influenced by the (potentially) idiosyncratic staffing and cost levels of individual schools as revealed by survey data.

Presentation of the Salary Costs Data

In the following discussion an issue of major importance will be the relation between school enrolment and average costs since this consideration is critical for informing policy decisions on school size, and for assessing the likely resource implications of changing patterns of enrolment. Much of this discussion will therefore focus upon the existence or otherwise of economies of scale in the operation of schools. It should be noted that in some senses the term 'scale' is not altogether appropriate in the context of school costs, because, as it has been used in economics, scale refers to the level of production of a given output. Because of difficulties in the conceptualization and measurement of the outputs of schooling, most studies of school costs do not concern themselves with an examination of costs per unit of output but rather examine costs per student. In response to this semantic difficulty, Hough (1981) proposed that the discussion of school costs should be couched in terms of 'economies of size' rather than 'economies of scale'. In the present study, the more traditional term of economies of scale will be employed because it is the one which has been most commonly used in studies of school costs. It is important to note, however, that as applied to schools, the term scale economies is not synonymous with its application in other settings.

The total salary costs of a school can be represented as follows:

$$TSC = {}_{i=1}^{\;n}\sum P_i S_i$$

where TSC = total salary costs
P_i = the total number of personnel in the ith personnel category
and S_i = the average salary paid to personnel in the ith personnel category

In this study P_i refers to teachers and is derived from the staffing schedules and supporting documents supplied by each of the eight systems. The basic data derived from these schedules were presented in the previous chapter. Salary cost data were derived from several sources and are detailed in Appendix II. The salary cost data used are those which apply to particular personnel categories and have not been used in the aggregated form implied by the grouping together of various promotion positions that was undertaken in the previous chapter.

The results of the teacher cost calculations are contained in Tables 6.1(a) to (h), where for each government system the total teacher salary costs, teacher salary costs per student and marginal teacher salary costs per student implied by the primary and secondary staffing schedules are shown. To simplify expression, the terms total, average and marginal costs will be used respectively. Average costs were derived by dividing the total costs of each school by the enrolment of the school. In principle, marginal costs refer to the change in total costs as one additional student is added to the school enrolment. In practice this was derived by dividing the change in total costs between two enrolment levels by the number of students separating the two levels. Accordingly, in the tables marginal costs are shown at the midpoint of the relevant enrolment levels. The general form of the relation between average and marginal costs is that where marginal costs are less than average costs, average costs will continue to fall. Over the range where marginal costs exceed average costs, average costs will rise.

School Size: Cost Implications

In both the primary and secondary sectors of Tables 6.1(a) to (h), over most enrolment levels the increase in total salary costs is less than proportionate to the increase in enrolments. This implies that over most of the enrolment range, average costs per

Table 6.1(a) Formula Allocation of Teachers. Relation Between School Enrolment and Annual Teacher Salary Costs, Australian Capital Territory 1980

	Primary			High			College		
Enrolment	Tot. $000	Marg. $	Av. $	Tot. $000	Marg. $	Av. $	Tot. $000	Marg. $	Av. $
25	17.3	951	692	..	..	..	..	..	..
50	41.1	656	821	..	..	..	..	..	..
100	73.9	744	739	..	..	..	..	..	..
200	148.3	805	742	..	..	..	..	..	..
300	228.8	755	763	493.0	630	1643	..	..	..
400	304.3	598	761	556.0	1292	1390	..	..	..
500	364.1	534	728	685.2	969	1370	827.3	1244	1655
600	417.5	598	696	782.1	953	1303	951.7	1308	1586
700	477.3	534	682	877.4	985	1253	1082.6	1292	1547
800	530.7	534	663	975.9	1018	1220	1211.8	1308	1515
900	584.0	..	649	1077.7	1001	1197	1342.6	..	1492
1000	..		..	1177.9		1178	..		..

Source: Tables 5.7(a), 5.10(a) and Appendix II.

Note: Tot. = Total Teacher Salary Costs.
Marg. = Marginal Teacher Salary Cost Per Student.
Av. = Average Teacher Salary Cost Per Student.

Table 6.1(b) Formula Allocation of Teachers. Relation Between School Enrolment and Annual Teacher Salary Costs, New South Wales 1980

	Primary			Secondary		
Enrolment	Total $000	Marginal $	Average $	Total $000	Marginal $	Average $
25	14.5	824	580	..	..	..
50	35.1	638	702	..	..	..
100	67.0	695	670	..	..	..
200	136.5	478	682	362.7	1090	1814
300	184.3	632	614	471.7	960	1572
400	247.5	510	619	567.8	670	1420
500	298.5	710	597	634.4	855	1269
600	369.5	655	616	719.9	748	1200
700	435.0	449	621	794.8	1204	1135
800	480.0	460	600	915.2	1037	1144
900	525.9	464	584	1018.9	765	1132
1000	572.3	567	572	1095.4	888	1095
1100	628.9	..	572	1184.2	781	1077
1200	..	..	..	1262.3	895	1052
1300	..	..	..	1351.7	895	1040
1400	..	..	..	1441.2	1172	1029
1500	..		..	1558.3		1039

Source: Tables 5.7(a), 5.10(a) and Appendix II.

Table 6.1(c) Formula Allocation of Teachers. Relation Between School Enrolment and Annual Teacher Salary Costs, Victoria 1980

Enrolment	Primary Total $000	Primary Marginal $	Primary Average $	Secondary[a] Total $000	Secondary[a] Marginal $	Secondary[a] Average $
25	14.3	1240	573	..	..	..
50	45.3	632	906	..	..	..
100	76.9	705	769	..	..	..
200	147.4	548	737	..	..	..
300	202.2	870	674	441.4	971	1471
400	289.2	590	723	538.6	856	1346
500	348.3	480	697	624.2	841	1248
600	396.3	590	661	708.3	941	1180
700	455.3	590	650	802.4	841	1146
800	514.4	616	643	886.5	911	1108
900	576.0	632	640	977.6	871	1086
1000	639.2	..	639	1064.7	966	1065
1100	..		..	1161.3		1056

Source: Tables 5.7(a), 5.10(b) and Appendix II.

[a] High schools only.

Table 6.1(d) Formula Allocation of Teachers. Relation Between School Enrolment and Annual Teacher Salary Costs, Queensland 1980

Enrolment	Primary Total $000	Primary Marginal $	Primary Average $	Secondary Total $000	Secondary Marginal $	Secondary Average $
25	16.4	785	654	..	..	..
50	36.0	581	720	..	..	..
100	65.1	447	651	..	..	..
200	109.8	581	549	316.2	1209	1581
300	167.9	973	560	437.2	1004	1457
400	265.2	436	663	537.6	1004	1344
500	308.9	291	618	638.0	1050	1276
600	337.9	986	563	743.0	946	1238
700	436.5	436	624	837.6	1050	1197
800	480.1	727	600	942.6	1004	1178
900	552.7	436	614	1043.1	837	1159
1000	596.4	628	596	1126.8	1096	1127
1100	659.1	436	599	1236.3	883	1124
1200	702.7	..	586	1324.6	1072	1104
1300	..	..	..	1431.8	1020	1101
1400	..	..	..	1533.8	837	1096
1500	..		..	1617.5		1078

Source: Tables 5.7(b), 5.10(b) and Appendix II.

Table 6.1(e) Formula Allocation of Teachers. Relation Between School Enrolment and Annual Teacher Salary Costs, South Australia 1980

Enrolment	Primary Total $000	Primary Marginal $	Primary Average $	Secondary Total $000	Secondary Marginal $	Secondary Average $
25	39.1		1563	..		..
50	40.5	57	810	..	..	..
100	71.6	623	716	..	..	..
200	148.9	773	745	315.7	..	1578
300	212.6	637	709	426.7	1110	1422
400	270.6	580	677	545.7	1190	1364
500	331.9	612	664	657.7	1121	1315
600	395.0	631	658	760.7	1030	1268
700	448.8	538	641	872.2	1115	1246
800	502.5	538	628	698.9	968	1211
900	557.7	552	620	1064.1	952	1182
1000	611.5	538 ..	611	1160.9	968	1161
1100	..	..	..	1257.7	968	1143
1200	..	..	..	1354.4	968	1129
1300	..	..	..	1456.3	1020	1120
1400	..	..	..	1551.5	952	1108

Source: Tables 5.7(b), 5.10(c) and Appendix II.

Table 6.1(f) Formula Allocation of Teachers. Relation Between School Enrolment and Annual Teacher Salary Costs, Western Australia 1980

Enrolment	Primary Total $000	Primary Marginal $	Primary Average $	Secondary Total $000	Secondary Marginal $	Secondary Average $
25	27.9		1115	..		..
50	37.2	372	743	..	..	..
100	84.6	949	846	..	..	..
200	148.4	638	742	315.2	..	1576
300	202.9	545	676	403.6	884	1345
400	266.7	638	667	528.8	1253	1322
500	334.7	680	669	586.1	572	1172
600	403.0	683	672	640.0	540	1067
700	447.5	445	639	748.5	1085	1069
800	498.0	505	622	851.3	1028	1064
900	..	..	..	924.5	732	1027
1000	..	..	..	1027.1	1026	1027
1100	..	..	..	1105.5	784	1005
1200	..	..	..	1154.3	488	962
1300	..	..	..	1281.4	1272	986
1400	..	..	..	1354.6	732 ..	968

Source: Tables 5.7(b), 5.10(c) and Appendix II.

Table 6.1(g) Formula Allocation of Teachers. Relation Between School Enrolment and Annual Teacher Salary Costs, Tasmania 1980

Enrolment	Primary			Secondary[a]		
	Total $000	Marginal $	Average $	Total $000	Marginal $	Average $
25	18.6	732	744	..	..	..
50	36.9	633	738	..	..	..
100	68.5	637	685	..	..	..
200	132.2	665	661	..	..	..
300	198.7	786	662	375.1	1090	1250
400	277.3	649	693	484.1	1095	1210
500	342.2	660	684	593.6	1138	1187
600	408.2	651	680	707.4	1018	1179
700	473.3	635	676	809.2	1034	1156
800	536.7	623	671	912.6	1034	1141
900	599.0	..	666	1016.0	1050	1129
1000	..		..	1121.0		1121

Source: Tables 5.7(c), 5.10(c) and Appendix II.

[a] High schools only.

Table 6.1(h) Formula Allocation of Teachers. Relation Between School Enrolment and Annual Teacher Salary Costs, New Zealand 1980

Enrolment	Full & cont.			Intermediate			Secondary		
	Tot. $000	Marg. $	Av. $	Tot. $000	Marg. $	Av. $	Tot. $000	Marg. $	Av. $
25	14.6	464	582	..	..	..	...	..	..
50	26.2	483	523	..	..	..	..	..	..
100	50.3	424	503	..	..	..	..	..	..
200	92.7	319	464	121.9	319	609	235.9	550	1179
300	124.6	407	415	153.4	553	513	290.8	999	970
400	165.2	435	413	209.0	727	523	390.7	681	977
500	208.8	421	417	281.7	421	563	458.8	613	918
600	250.9	475	418	323.8	475	540	520.1	660	869
700	298.4	390	426	371.4	390	531	586.1	652	837
800	337.4	359	422	410.4	359	513	651.3	686	814
900	373.3	..	415	446.3	..	496	719.9	637	800
1000	..	..	..	..	..	..	786.3	616	784
1100	..	..	..	..	..	..	845.2	637	782
1200	..	..	..	..	..	..	908.9	864	757
1300	..	..	..	..	..	..	995.3	766	766
1400	..	..	..	..	..	..	1071.9	501	766
1500	..		..	..		..	1122.0		748

Source: Tables 5.7(c), 5.10(c) and Appendix II.

student decline as enrolment increases. This decline is smoother in the case of secondary schools than it is for primary schools. In the primary school sector of each system, the decline in average costs as enrolments increase is marked by discontinuities which reflect the rather lumpy nature of most primary staffing schedules. For example, the Queensland primary staffing schedule allows for the minimum staffing entitlement of a primary school with 400 students to exceed that of a primary school of 300 students by the equivalent 3 assistants, a deputy principal and a higher grade principal. These additional entitlements explain why, as shown in Table 6.1(d), the per student salary cost of a Queensland primary school with 400 students is over $100 higher than a primary school with 300 students. Similar examples could be found from the primary school sectors of the other systems. The enrolment ranges over which marginal costs are shown to be relatively large indicate the points at which the discontinuities operate. The arbitrary enrolment levels used to derive the costs shown in Table 6.1(a) to (h) probably serve to over-emphasize discontinuities in the average cost function.

By contrast, in the secondary school sector of most systems, the decline in average costs as enrolments increase is more rapid, and less marked by discontinuities, than in the primary sectors. The different behaviour of average costs in the primary and secondary sector reflects the fact that in most systems the secondary staffing schedule allows for a relatively small secondary school of, say 300 students, to be equipped with a complement of principal, deputy, senior teachers and assistants which is gradually added to as enrolments rise. From a costing perspective these additions tend to be 'more of the same' since, as is apparent from Appendix II, in most systems the salary classification for primary promotions positions contain more gradations than the salary classification for secondary promotion positions. As a consequence, the difference in the staffing levels of two primary schools of differing size is likely to comprise, in addition to greater teacher numbers, a principal, deputy principal and even senior teachers of a higher classification in the larger of the two schools. The secondary staffing schedules and the structure of secondary teachers salaries tend to make this less likely to occur in the secondary sector.

Despite some discontinuities in the relation between average costs and enrolments in the primary school sector, overall the general relationship is one of declining average costs as enrolments increase. This is perhaps better illustrated in Table 6.2, where the primary school average cost data for each system are presented in index form, with the per student average salary cost in a primary school of 100 students being set as a base of 100.0. From this table it can be seen that in every system, a school at the highest enrolment level has a lower per student teacher salary cost than a school of 100 students. The economies of scale, which appear to be most marked in the primary schools of Western Australia and New Zealand, are the direct result of the primary staffing schedules utilized by each system. These schedules provide for smaller schools to receive lower student-teacher ratios and a higher ratio of promotion positions than

Table 6.2 Formula Allocation of Teachers to Primary Schools. Indices of Teacher Salary Costs Per Student, Australia and New Zealand 1980. Base: Per Student Cost at Enrolment of 100 Students = 100.0

Enrolment	Australian Capital Territory	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	New Zealand	
								Full and contributing	Intermediate[a]
100	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	..
200	100.4	101.8	95.8	84.3	104.1	87.7	96.5	92.2	100.0
300	103.2	91.6	87.6	86.0	99.0	79.9	96.6	82.5	84.2
400	103.0	92.4	94.0	101.8	94.6	78.8	101.2	82.1	85.9
500	98.5	89.1	90.6	94.9	92.7	79.1	99.9	82.9	92.4
600	94.2	91.9	86.0	86.5	91.9	79.4	99.3	83.1	88.7
700	92.3	92.7	84.5	95.9	89.5	75.5	98.7	84.7	87.2
800	89.7	89.6	83.6	92.2	87.7	73.5	98.0	83.9	84.2
900	87.8	87.2	83.2	94.3	86.6	..	97.2	82.5	81.4
1000	..	85.4	83.1	91.6	85.3	..	..	..	..
1100	..	85.4	..	92.0	..	..	..	..	..
1200	..	..	..	90.0	..	..	..	..	..

Source: Tables 6.1(a) to (h).

[a] For Intermediate schools the base for per student costs is set at an enrolment of 200 students = 100.0.

apply in larger primary schools. The economies of scale shown in Table 6.2 are not, however, uniform across the systems. Aside from the discontinuities that have already been noted, the magnitude of the decline in average costs varies between the systems. For example, when comparing schools of 100 and 500 students, average costs in the larger school are almost the same as in the smaller school in Tasmania, less than 2 per cent lower in the Australian Capital Territory, about 5 per cent lower in Queensland, about 10 per cent lower in New South Wales, Victoria, South Australia and the intermediate schools of New Zealand, and of the order of 20 per cent lower in Western Australia and the full and contributing New Zealand primary schools. These differences suggest that generalizations about the behaviour of average costs across the eight systems should be treated with some caution. What is generalizable, however, is that the rate of decrease in average costs declines as enrolments increase such that by the time an enrolment of 400 students is reached, in most systems the scale economies associated with larger schools are less marked. At the higher levels of enrolment in most systems, say in moving from 800 to 1000 students, the decline in average per student teacher salary costs are relatively small. This behaviour of the average cost curve suggests that the most appropriate function to describe the relation between average costs and enrolments is not linear, but rather is hyperbolic of the form

$$AC = a + \frac{b}{E}$$

where AC = average costs,
E = enrolment, and
a and b are constants.

Secondary Schools

The relation between secondary school enrolment levels and average salary costs per student are shown in Table 6.3 where for each system average costs are expressed as an index of the costs found to apply to schools with an enrolment of either 200 or 300 students. As noted earlier, in contrast to the primary school data presented in Table 6.2, the decline in average costs as enrolments increase is more rapid in secondary schools. A doubling of school enrolment from 200 to 400 students is associated with a decline in secondary school average costs of between 10 and 20 per cent in all systems except for Tasmania. In the primary school sector an increase in enrolments over the same range leads to a much smaller decrease, and in several systems is even associated with a slight rise in average teacher salary costs. The different behaviour of the average cost curves in the primary and secondary sectors is largely explained by the tendency for the secondary staffing schedules, in contrast to the primary schedules, to supply even

Table 6.3 Formula Allocation of Teachers to Secondary Schools. Indices of Teacher Salary Costs Per Student, Australia and New Zealand 1980. Base: Per Student Cost at Enrolment of 200 Students = 100.0

Enrolment	ACT[a]		New South Wales	Victoria[b] (High)	Queensland	South Australia	Western Australia	Tasmania[b] (High)	New Zealand
	High	College							
200	..	..	100.0	..	100.0	100.0	100.0	..	100.0
300	100.0	..	86.7	100.0	92.2	90.1	85.3	100.0	82.3
400	84.6	..	78.3	91.5	85.0	86.4	83.8	96.8	82.9
500	83.4	100.0	70.0	84.8	80.7	83.3	74.3	95.0	77.9
600	79.3	95.8	66.2	80.2	78.3	80.4	67.7	94.3	73.7
700	76.3	93.5	62.6	77.9	75.7	79.0	67.8	92.5	71.0
800	74.3	91.5	63.1	75.3	74.5	76.7	67.5	91.3	69.0
900	72.9	90.2	62.4	73.8	73.3	74.9	65.2	90.3	67.9
1000	71.7	..	60.4	72.4	71.3	73.6	65.2	89.7	66.5
1100	..	..	59.4	71.8	71.1	72.4	63.8	..	66.3
1200	..	..	58.0	..	69.8	71.5	61.0	..	64.2
1300	..	..	57.3	..	69.6	71.0	62.6	..	65.0
1400	..	..	56.7	..	69.3	70.2	61.4	..	65.0
1500	..	..	57.3	..	68.2	..	..	..	63.4

Source: Tables 6.1(a) to (h).

[a] Base for ACT high schools per student cost is set at an enrolment of 300 students = 100.0; for the ACT colleges the base is set at 500 enrolments.

[b] Base for high schools per student cost is set at an enrolment of 300 students = 100.0.

relatively small secondary schools with a reasonably full range of seniority and specialist teacher classifications. Accordingly, the decline in average costs as enrolments increase is relatively rapid as these fixed costs are being spread across a greater number of students. Related to this consideration is the observation that the rate of decline in average costs as secondary enrolments increase slows down quite markedly once a reasonably substantial enrolment level is reached. For example, in New South Wales, Queensland and New Zealand, each of which has a number of relatively large secondary schools, the decline in student average costs in moving from an enrolment of 1000 students to 1500 students is shown by Table 6.3 to be less than three per cent.

Other Research on School Costs

The teacher salary cost levels in relation to school size that are revealed in Tables 6.1(a) to (h) are in close accord with the general findings of costs studies conducted in Australia and overseas over similar enrolment ranges. Such studies have been particularly prevalent in the United States. One of the more influential of these was conducted by Riew (1966) who examined the recurrent costs of senior secondary schools in Wisconsin and found that while per student costs declined steadily up to an enrolment level of about 900 students, in the very large schools in that system, namely those with between 1600 and 2400 students, per student operating costs on average were some 35 per cent higher than in schools with between 700 and 900 students. In other words, Riew identified a U-shaped average cost function applying in that system. Despite the increase in average costs associated with very large schools, Riew concluded that the increased quantity and variety of programs possible in such schools could justify their additional operating costs. Most studies have not examined schools of sufficiently large size for an increase in average costs with enrolments to be detected. For example, Fonstad (1973) in a review of over 400 school costs studies, demonstrated that more than 90 per cent of the studies showed a decline in per student costs as enrolment increased. Hough (1981) in a study of recurrent school costs in four English local education authorities concluded that economies of scale were evident for both primary and secondary schools even though the variety of secondary school structures made generalizations difficult. At the primary school level, the range of school size was insufficient for an optimum average cost point to be easily identified. At the secondary level, comprehensive high schools covering a full range of year levels were found to reach an optimum average cost point in the range of 800 to 1000 students, while for secondary schools containing students from the upper year levels only, the average costs showed little decline above the 1500 enrolment level.

In Australia there have been few published studies examining the school costs issue. Hind (1977) in a study of primary school costs in rural New South Wales segregated school costs into two categories. The first of these was instruction and administration which largely comprised salary costs, and the second was school maintenance which included both salary and materials costs. Hind hypothesized that a different relation between each of these expenditure categories and school size would be likely, and tested this hypothesis by fitting functions to the school size and cost data. In the administrative and instructional cost category, he concluded that the relation with enrolment was curvilinear and hyperbolic and that approximately 80 per cent of the variation in expenditure in this category was explained by the reciprocal of school enrolments. A similar relation was detected for the maintenance expenditure category except that here school enrolment accounted for only about 60 per cent of the variation in per pupil costs. Hind concluded that most of the economies in the instructional and administrative category were exhausted by about the 100 enrolment level in primary schools since above that point the decline in average costs associated with increased enrolment was relatively small. This finding differs from that implied by the formula-devised salary cost data in Tables 6.1(a) to (h), where considerable economies in primary school size in most systems appeared to exist up to enrolments of about 400 students. In part this difference would be due to the fact that the basis for the cost comparisons in Table 6.2 is the per pupil costs of schools with 100 students and it is in comparison with this base that the scale economies are evident. By contrast, Hind included actual salary cost data for a large number of schools with less than 100 students. Thus the comparative bases of the two data sets differ.

Curtis (1981) examined the relative costs of South Australian primary and secondary schools in the government school sector in 1979. While noting the variation in the costs of schools of similar size and the discontinuities in the behaviour of average costs as enrolments rose, Curtis was able to demonstrate that in the case of primary schools, while significant average cost decreases could be expected up to an enrolment level of about 200 students, the decline in average costs beyond this point was not substantial. For example, between primary enrolments of 400 and 800, average costs declined by $70 per student, or just under 7 per cent. At the secondary school level, Curtis demonstrated that while economies of scale are evident up to the range of about 600 to 800 students, beyond that point smaller decreases in per student costs may be expected as enrolments grow. For example, Curtis showed that between secondary schools of 200 and 800 students per student costs declined by some $620 or 27 per cent. An increase in the size of a secondary school from 800 to 1400 students, on the other hand, was associated with a decline in per student costs of $110, or just under 7 per cent. Although Curtis was able to employ a wider range of recurrent cost categories than in this study, his findings are consistent with those suggested by Tables 6.2 and 6.3.

School Type: Cost Implications

As is shown in Tables 6.1(a) to (h), in each of the eight government education systems, the imputed teacher salary costs of operating secondary schools exceed the per student operating costs of primary schools. At most enrolment levels, the magnitude of this difference is at least 60 per cent, and in several systems exceeds 100 per cent. Such differences reflect the relatively low student-teacher ratios embodied in secondary staffing schedules when compared with their primary counterparts, and the higher proportion of promotion positions in the seniority configuration of secondary schools. These structural characteristics are exacerbated in most systems by the teacher salary structures which, as noted in Appendix II, entail relatively higher salaries for secondary teachers. However, in systems such as Victoria which have stated policies to narrow the resource gap between primary and secondary schools, policies which the student-teacher ratio data shown in Table 4.5 indicate to be working, the cost differentials between primary and secondary schools will also narrow.

Within the one sector, per student operating costs vary between different types of school structure. For example, in New Zealand, the imputed teacher salary operating costs of intermediate schools exceed those in full and contributing primary schools by at least 20 per cent at most enrolment levels. In the Australian Capital Territory, a similar difference exists between the per student imputed teacher salary of senior colleges and high schools. One would also expect that in Victoria, the per student operating costs of technical schools would exceed those applying in high schools of equivalent size, by virtue of the lower student-teacher ratios implied by the technical schools staffing schedules. In these three examples of different operating costs applying to schools of different type within the one sector, the variations in costs are due solely to the different level and configuration of teacher entitlements embodied in the respective staffing schedules. In these instances, because schools are in the same sector, different salary awards would not contribute to differences in costs. The only real exception to this would be in the intermediate schools of New Zealand which have some specialist teachers who are paid under secondary teacher salary scales.

It should be noted that the per student cost differentials which exist in the Australian Capital Territory between high schools and senior secondary colleges are not necessarily an indication that such a system is proportionately more expensive to operate than a system comprising secondary schools which span the full years of secondary education. The companion volume (Ainley, 1982) reports survey data on within-school resource allocation policies which shows that in all systems schools allocate proportionately more teacher resources to the upper secondary levels. In the case of several systems the differential in resource allocation (as measured by time-weighted average class size) between the year levels is proportionately greater than the cost differential between the high schools and colleges shown in Table 6.1(a). The difference between the resource levels of the high schools and colleges in the ACT reflects the origins of the system as a part of the New South Wales government school system. As was noted in the previous chapter, the secondary staffing schedules which operate in New South Wales allocate proportionately more teachers for the upper year levels. At the formation of the ACT system in 1974, this weighting was reflected in the staffing schedules developed for the high schools and colleges.

An interesting perspective on the issue of school type and per student operating costs was proposed by Riew (1981), who developed a model which can be used to estimate some of the economic implications of relocating primary and secondary classes. Beginning with the premise that declining enrolments force consideration of the potentially expensive implications of under-utilizing plant, equipment, and personnel, Riew argued that economic advantages are likely when the most expensive educational resources are the least under-utilized. In the metropolitan Maryland country in which Riew tested his model the most expensive sectors were (in descending order of per-pupil cost) the senior high schools, the junior high schools, and the primary schools. Accordingly, the structural reorganization which Riew simulated involved the transfer of the highest primary school year level to the junior high school, and the shifting of the highest junior high school year level to the senior high school. On this basis, he estimated that considerable resource cost savings could flow to the whole system because the degree of under-utilization of the most expensive educational sector (the senior high school) was minimized. The Riew approach is open to some methodological criticisms (for example capital costs and student transportation costs were not included in the model), and little consideration was paid to the full range of educational implications of the proposed restructuring. The analysis is of interest, however, because it facilitates debate on the optimum configuration of school structures.

In school systems which operate several types of schools that vary in per student operating cost, times of financial stringency could lead to consideration of policy proposals similar to those discussed by Riew (1981), to relocate students from the more costly sectors, for example, by delaying the point of entry to secondary school for a year. This would appear to offer cost savings, since, as clearly evident from Tables 6.1(a) to (h), in each system, per student operating costs are lower in primary than secondary schools. It should be noted, however, that the potential financial benefits from such a policy may not be realised in all circumstances. In part, this would be attributable to the distribution of resources between year levels in primary and secondary schools. As is evident from the survey and case studies of school practices reported in the companion volumes (Ainley, 1982 and Sturman, 1982), secondary schools tend to allocate proportionately more of their teaching resources to the upper year levels. Accordingly, it may be expected that the per student cost of providing classes in the first year of secondary school would be lower than the per student cost of the whole secondary school. Ainley (1982) also reports a tendency in a number of primary schools for the program for students in the final year of primary schooling to entail a proportionately higher number of specialist teaching staff, thereby raising the per student operating cost of the final year level above the per student cost of the whole school. The differences in the per student operating cost of the last year of primary education and the first year of secondary education are likely to be smaller than the differences in the per student operating costs of the primary and secondary sectors as a whole. In addition to these cost issues, the educational implications of such policies would also require thorough evaluation.

Changing Enrolment Patterns: Cost Implications

One of the more important implications of the relationship between school size and per student costs is that should any one system experience a change in enrolment patterns such that the average enrolment of schools declines, per pupil costs will increase without concomitant changes in the staffing schedules. Some idea of the order of such an increase is provided by Burke et al., (1981), who estimate that the reduction in the average size of schools in the Australian Capital Territory over the second half of the 1970s, of itself increased costs per student by 4.2 per cent. In Victoria between 1975 and 1981, total high school enrolments declined by just over five per cent and the number of high schools increased by 20 to 286 (Victoria. Education Department. Compendium of Statistics). These changes resulted in a decline in the average high school enrolment from 678 to 597 students. On the basis of the data contained in Table 6.3, this would have resulted in an increase in per student operating costs of about three per cent.

Changes in enrolment patterns can also affect the dispersion school size around the mean. This point was first raised in the Australian context by Burke et al. (1981). They argued that over the enrolment range where the marginal cost curve is declining and lies below the average cost curve, an increase in the dispersion of school size around the mean reduces total system operating costs, other factors remaining constant. In theory, so long as the marginal cost curve lies below the average cost curve, average costs will continue to decline (albeit at a different rate) whether marginal costs are falling, rising, or constant. These latter two theoretical possibilities mean that in addition to the relationship between school size dispersion and total system operating costs described by Burke et al., there are two other situations which need to be considered:

1 where the marginal costs curve lies below the average costs curve but is rising, an increase in school size dispersion around the mean is likely to increase total system operating costs, other factors equal; and

2 where marginal costs are constant and less than average costs, a change in the dispersion of school size is not likely to affect total system operating costs, other factors equal.

These theoretical considerations raise the empirical issues of the effect of changing patterns of enrolment upon the dispersion of school size around the mean, and the shape and location of the average and marginal cost curves over the relevant enrolment range. The locational distribution of enrolment changes will be a major influence on dispersion. If enrolment decline is concentrated in inner suburban and rural areas which already have relatively small schools, dispersion of school size around the mean will increase. The extent of this will be influenced by system policies on the amalgamation of small schools and the degree of parental choice in the schools which their children attend. In this respect, the issue of removing zoning restrictions on students could be important. Burke et al. (1981) cite evidence to suggest that the introduction of dezoning in South Australia in 1980 increased the dispersion of school size in Adelaide. On the other hand, in the Australian Capital Territory, which also has no zoning restrictions, there was a reduction in the dispersion of school size around the mean over the latter part of the 1970s (ibid.).

The issue of whether changes in the dispersion of school size will reinforce or offset the financial impact of changes in the average size of schools will, as indicated above, be dependant upon the location and shape of the average and marginal cost curves. Tables 6.1(a) to (h) provide some indication of these considerations in the context of Australian and New Zealand government schools. As can be seen from these data, although some discontinuities exist in the behaviour of average and marginal costs, over the enrolment range relevant to average school size in each system, the marginal costs in general either decline slightly or are relatively constant. These data suggest that in terms of recurrent staffing costs at least, changes in the dispersion of school size around the mean are unlikely to have a significant effect upon costs. Of more importance will be the impact of changing patterns of school enrolment upon the average size of schools, and on the distribution of students between school sites and between year levels within schools. As was discussed in Chapter 4, in a period of declining enrolments the conjunction of these factors is likely to necessitate an increase in per student expenditure.

CHAPTER 7

SOME POLICY OPTIONS

Introduction

The preceding chapters have sought to describe the structure of the government education systems of Australia and New Zealand, the number and other characteristics of the personnel employed in the education systems, the policies used to allocate personnel resources to schools, and some of the effects of these policies upon the costs of operating government schools. It was hoped that this descriptive material could achieve two major objectives. First, that the policies and practices confined to one education system or to a few systems could be described in a manner which would assist those in other education systems to assess the value of such initiatives for change in their own systems. Through this material it was hoped to be able to identify what may be termed 'growing points' for educational policy. The second major objective was the stimulation of debate about the structures and policies common to most, if not all, of the education systems. It is not necessarily the case that such structures and policies are no longer appropriate, but rather that periodically it is often useful to rethink the purposes of long-established practices and policies. Examples of policies common to all of the systems that have been described and discussed include the differential allocation of teachers and other personnel resources to primary and secondary schools, and the influence of the staffing schedules upon the level and configuration of personnel resources in schools of different size.

The discussion of such fundamental and widely accepted resource allocation policies also provide the background against which changes in the education systems would need to be considered. This consideration constitutes the central focus of this chapter: to place the material describing the structures and policies of the education systems in the context of pressures for change.

Pressures for Change

The pressures for change in the education systems come from a variety of sources. As was argued in Chapter 1, there is a growing acceptance of the view that schools, and in particular secondary schools, should attempt to broaden their programs in order to cater more adequately for the needs and interests of a more diversified student population. At the same time as these expectations of a change in the role of schools are becoming prominent the capacity of some schools and systems to meet such expectations are hampered by education budgets whose real value has grown little, if any, over the past three years. Declining enrolments in particular areas are putting further pressure on the resources available for allocation to schools.

In the Australian context, some of the pressure for change emanates from the Commonwealth government, while some is derived from a re-orientation of State priorities and programs. New Zealand is perhaps fortunate to be free of the potential for conflict between levels of government that appears to be endemic to federal structures. This is not to say that there is not considerable debate in New Zealand about the appropriate purposes and structures of the government school system. This debate is exemplified in the establishment of major bodies of inquiry such as the Committee on Secondary Education which was established in 1975 and the continuing work of bodies such as the Education Development Council.

The impetus for debate on educational issues in New Zealand has come from a variety of directions, a number of which have also operated in the Australian government systems, including the impact of demographic changes, national economic difficulties, and calls for an increased diversity of educational provision. The New Zealand education system, however, has a number of unique characteristics which have led to the emergence of thrusts and pressures quite distinct from those applying in Australia. As one example, a relatively high degree of responsibility for administrative matters resides at the primary school level with the education boards and at the secondary level with the local school community. Overall however, the basic similarity of the government school systems in New Zealand and Australia, and the close parallels between the two societies, ensure a high degree of congruence in the nature of the developments in each system.

The pressures for change in the school systems outlined above essentially arise from outside the systems themselves. In addition, each system has also been subject to internal pressures from teachers, parents, and to a lesser extent from students, for modifications to existing structures and policies. Over recent years, such groups would appear to have increased their desire to participate in educational policy making, and also their capacity to do so effectively. The best documented accounts of this development are available for the role of teachers and teachers unions, a role which has been characterized, for example by Mitchell (1975) and Spaull (1977), as moving from preoccupation with purely industrial matters to one of a concern with wider matters pertaining to schools and schooling. Less extensively documented but nonetheless evident is the increasing involvement of parents and community groups in education policy issues. An illustration of the extent of this role is provided by the studies of education policy making in each of the six Australian States, the ACT and the Northern Territory conducted as part of a comparative study of education policy processes in the United States and Australia (see Harman and Wirt, 1980). Each of the eight case study reports in that project contains a detailed analysis of the role of parent and community groups in either facilitating, or in the case of some curriculum matters, frustrating education policy proposals. The involvement of parents and community groups in education policy making may be expected to grow even further, particularly in those systems which have established school councils containing parent and community representatives, and where the councils have had considerable responsibilities devolved to them. The pressures for change that have become evident over recent years have meant that few education administrators in Australia or New Zealand would now agree that the path of educational change could be characterized as it had been by Partridge who wrote of earlier periods that:

> . . . the growth of education has not been troubled, or for that matter enlivened, by any intellectual or social turbulence; the administrative and professional educators have enjoyed a pretty quiet, peaceful and unexamined life. (Partridge, 1973:235)

The external and internal pressures for change in the education systems that have been evident in Australia and New Zealand over the 1970s emanate from what has been referred to by Professor Maurice Kogan as 'the widening educational constituency'. The broadening of the range of individuals and groups who wish to be involved in education policy formation is only to be expected where there is an increasing interdependence between the education sector and the society in which it is located. This development is also to be anticipated in societies such as Australia and New Zealand, where the general level of education is rising, a phenomenon which appears to be associated with an increased desire by individuals to influence their environment and an increased willingness to question authority. Such developments are not only to be expected, they can also be welcomed as signs of a more vigorous, lively society. The developments are not, however, without their share of difficulties. As was expressed by Partridge when discussing the long period during which few community pressure groups were active in Australian education:

> It could be said that this has been Australia's great good fortune; everyone knows that ideology can play hell with education. It has done so in many European countries, even in the United States from time to time. (Partridge, 1973:236)

The manner in which the education systems interact with the broadened educational constituency will determine the efficacy with which policy changes can be implemented since without the support of those most directly affected by policy changes, the achievement of policy goals is difficult. Consequently it would appear both desirable and necessary for new policies and practices to evolve from debate that involves the teachers, parents, students, and other members of the education community.

The preceding discussion should not be misconstrued as suggesting that pressure for change in the structures and policies of the education systems is always beneficial or even necessary. There is a particular risk in the current climate that changes whose benefits are short-term, marginal, or even non-existent, may be forced upon the government school systems in a way that is detrimental to the long-term interests of the systems, and also of the societies which they serve. It should also not be misconstrued that change will only occur in the school systems if a particular group exerts pressure for change. Some policy initiatives will evolve through a general consensus that they are worthy of support. For example, based largely upon research evidence, there is now widespread acceptance of the view that particular students are disadvantaged in the learning process relative to their peers, and accordingly, while there may be debate about the methods used to identify needs and the programs adopted to meet those needs, there has been little disagreement with the general principle that certain students and schools require resources over and above the norm. It is also the case that certain changes once in train are likely to imply the necessity for further change at subsequent stages. For example, the devolution of curriculum authority to schools is likely to lead to a diversity of curriculum offerings between schools, thereby increasing demands from parents for the right to choose the schools which their children attend, as well as increasing the likelihood of schools wishing to exercise greater responsibility in the appointment of teachers. Such potential consequences illustrate the need to assess all the possible ramifications of any given policy change.

The capacity to assess such developments is likely to be increasingly tested in the years to come, particularly if, as is likely, the trends toward decentralization of responsibility for decision making intensify. Under these circumstances, the government school systems of Australia and New Zealand, will, to use the terminology of Archer (1979), become increasingly 'substitutive'. As was elaborated in Chapter 2, change in substitutive education systems tends to be localized, incremental and usually undramatic. By contrast, centralized education systems with restrictive origins tend to be characterized by change that is stop-go in nature, since in such systems the demands for change need to be passed upwards to the administrative and political centre. In comparison with the period before 1970, the government education systems of Australia and New Zealand now show more characteristics of substitutive education systems with regard to the devolution to schools of administrative responsibilities, and in some systems curriculum responsibilities, the formation in some systems of school councils with considerable authority, and the delegation of responsibility for a wide range of administrative matters to regional offices of education. These changes establish the potential for further change to occur as the result of local and regional initiatives.

There is however, one critical aspect of the administration of Australian and New Zealand government school systems which will limit the extent to which they evolve in the direction of substitutive systems. This is the overwhelming dependence of the systems upon government funds for their operation and development. The government systems and schools have little capacity to acquire independently funds over and above the level of the government grant. As a consequence, education must compete with other sectors for a share of the funds collected by government, and it is this necessity which is in part responsible for pressures towards centralized authority and uniformity of program which, it is believed help to establish clear lines of accountability for the disbursement of government funds. This is not to argue in favour of decentralized revenue-raising capacity because, as experience from the United States would suggest, uneven local tax bases engender marked inequalities of educational provision, and the highly visible connection between locally raised funds and expenditure upon local schools has probably served, in unfortunate ways, to increase the number of undesirable pressures upon schools. However, it is important to recognize that much of the character of the Australian and New Zealand government education systems is derived from their almost complete dependence upon government financial support, and that this dependence imposes pressures for change in certain directions, and constrains the possibilities of change in other directions. It is with these considerations in mind that some of the policy options which may be considered by education systems are discussed below.

Some Guiding Principles for Change

As evidenced by the recent White Papers on Government Education prepared in Victoria and Tasmania (Victoria, 1980; Tasmania, 1981), and the first report of the Committee of Enquiry into Education in South Australia (South Australia, 1981), five guiding principles would appear to be gaining acceptance as being of primary importance in the planning of change in school systems and in the allocation of staff and resources to schools.

1. There should be a devolution of power and responsibility where possible and where appropriate to local and regional units. Underlying this principle is the view that involvement in decision making engenders commitment. In addition, there are some decisions that are likely to be better made at a level close to the scene of action. Nevertheless, where decision making is decentralized, it is often seen to be necessary to develop procedures for accountability in order to ensure the ultimate responsibility of government for expenditure.
2. Not only should power and responsibility be devolved and decentralized wherever possible but it is desirable that democratic procedures should be used when making decisions at local and regional levels and that different interest groups should be represented. This will inevitably lead to greater involvement of parents, community members, teachers and students wherever policy decisions are being made and implemented.
3. If resource usage in education is not efficient, not only is the capacity to develop new programs limited, but the education sector is likely to come under increasing pressures, which although understandable, may have potentially damaging

consequences. To meet such pressures, it is necessary for the education sector to be able to demonstrate that efficient use is being made of resources. The difficulty, of course, is in obtaining agreement on the appropriate measures of educational efficiency.

4 Schools and educational institutions differ in their needs, but need involves a wider range of concerns than socio-economic disadvantage. Despite the common acceptance of need as an important criterion of resource allocation policies, there is a problem of identifying needs as well as providing the optimal level of resources to meet those needs. It is important to recognize that needs are not static but change and emerge in response to new circumstances. For example, an educational issue which is likely to figure more prominently in policy concerns is the general developmental needs of youth. The identification of these needs of youth at the upper secondary school level and the design of appropriate policies to meet them within current resource constraints are emerging as major problems.

5 Administrative structures and procedures should be sufficiently flexible to be able to respond effectively to changing conditions and circumstances. A necessary precondition for flexibility is knowledge of developments inside the education system, and an awareness of developments occurring outside the education system which are likely to impinge upon it. A further prerequisite for flexibility in policy making is the evaluation of existing policies.

The general direction of these five guiding principles has been succinctly expressed in the following summary statement from the White Paper on Strategies and Structures for Education in Victorian Government Schools:

> The administration of the Education Department will be reorganized at central office, regional and school levels to achieve increased devolution of power and responsibility to local and regional units; greater participation by parents, community members, teachers and principals in education governance; improved consultation; greater economy and efficiency in management; more effective co-ordination of functions and policies; and appropriate mechanisms for internal and external reviews of schools. Roles and responsibilities at each of the three levels will be reallocated so that decisions will be made at the most appropriate level and schools will better meet the needs of students at the local level, but in the context of policies affecting students generally and the system as a whole. (Victoria, 1980:49)

This view of the way in which educational change should proceed represents a signicant shift away from the centralized 'top-down' model of education administration that was the subject of severe criticism by authors such as Kandel (1938) and Butts (1955). It is important to note, however, that the move towards greater decentralization and consultation, while gathering pace during the 1970s, had in several systems been set in motion some years previously. For example, the 1960 Report of the Committee on State Education in Victoria (the Ramsay Report) stated:

> We would stress the increasing part being played by teachers and schools in determining the content of courses and teaching methods. We believe that in increasing measure the schools should become an integral part of community life. Such a position can be obtained only by increasing the share and, therefore, the pride of parents in their schools . . . We believe that experience will show the need for further revision of the pattern of organization, decentralization of authority and community participation. (Victoria, 1960:147)

The guiding principles for change in education that have been expressed in the 1980 Victorian White Paper and in similar documents from other education systems can therefore be viewed as part of a long-term trend towards greater decentralization of authority in education and greater consultation between all interested parties.

The Administrative Structures of the Education Systems

At the risk of over-simplication, it became apparent during the course of the study that concern about the administrative structures of the education systems principally revolved around two domains:

1 co-ordination of the activities of the different sectors of the government education systems, and

2 identification of the appropriate level of the education system at which particular decisions are most effectively taken.

Co-ordination of the Education System

The government education systems provide educational programs for significant sectors of the population from infants to adults, employ large numbers of people, manage buildings and capital equipment of great value, and conduct a wide range of activities. Given these background factors, it is not surprising that effective co-ordination of the sectors of educational activity is seen as a concern worthy of continuing attention. There is reason to believe that the difficulties of co-ordination have become even more pressing over the past decade. First, as was noted in Chapter 4, the sheer size of the education systems as measured by the number of students and particularly by the number of teachers, has increased markedly since 1970. Secondly, and perhaps more importantly, there is now considerable debate and disagreement about the purposes which schools should fulfil. Since co-ordination is essentially the process of ensuring that the activities of sectors are compatible with the achievement of over-arching objectives, when there is a lack of consensus about appropriate objectives, the task of co-ordination becomes a particularly difficult one.

As part of a response to these circumstances, several of the education systems are in the process of reorganizing their central and regional office administrative structures. A common feature of this reorganization is the recognition that an administrative structure built around teaching divisions derived from an age-grade classification of students into primary, secondary and technical sections may be inappropriate in so far as it does not possess sufficient flexibility to cope with changing circumstances.

Several significant changes have fostered this recognition. First, there has been a shift from centrally prescribed curricula to school-based curriculum development. Secondly, following a period of teacher shortage associated with rapid expansion of the school system, there is now, in aggregate, an excess of qualified teachers above what education department budgets will employ in most systems and little turn-over of teaching staff in schools. Thus, where once the finding of sufficient teachers to staff the schools and their allocation to specific positions was best undertaken from a central office, today there are in general fewer problems of placement. Thirdly, where formerly small groups of clerical staff could maintain the records for the system, with the advent of computerized procedures there is now the need for a highly skilled staff who can manage effectively these new approaches to accounting, the filing of records, and the compilation of summary statistics. Thus in order to cater for these changes in operation, several systems have reorganized their administrative services along functional lines to carry out work in operational areas of curriculum development, personnel, management and finance, and buildings and facilities.

The reorganization of administrative structures along functional lines is one part of the response towards facilitating greater co-ordination between the sectors of the education systems. Another aspect concerns the co-ordination of overall policy determination. As was noted in Chapter 2, different approaches to this question are evident in the systems. In New South Wales an Education Commission has been established which contains representatives from various sectors of the education system, from teachers associations, and from parent and community groups. The charter of the Education Commission includes the provision of advice to the Minister on issues which affect the broad operation of the education system. The advantage of the Commission-type approach to overall policy co-ordination is that it represents an attempt to consult with those who are likely to be directly affected by policy decisions, and that the consultative process and advisory functions are essentially in the public domain and consequently can be subject to comment and debate. In South Australia a different approach to overall policy co-ordination has been recommended (South Australia, 1981). This recommendation involves the establishment of an Educational Policy and Priorities Executive which would comprise the heads of the various educational sectors. The Executive would jointly consider intersectoral issues which required resolution and which had been brought before it by the Minister of Education; the Minister in turn would be provided with support services by a small Office of the Ministry.

Developments in Victoria are an interesting amalgam of the approaches to policy co-ordination embodied in the recommendations of the Committee of Enquiry in South Australia, and in the establishment of the Education Commission in New South Wales. As in South Australia, it appears that corporate management procedures will be established with regard to the functional areas of curriculum and services, personnel, building, and administration and finance. In addition, a State Board of Education similar in structure and purpose to the Education Commission of New South Wales has been established to provide advice on priorities within the overall education sector and on the co-ordination of educational activities.

The models of system co-ordination that have developed in New South Wales, Victoria and South Australia may not necessarily be appropriate for other government education systems. The particular configuration of advisory bodies and management group structures that are most suitable for individual systems will be influenced by the size and complexity of the system, and the strength and influence of existing bodies and procedures. The proposals described above, however, recognize that for the effective management of increasingly complex education systems, the value of hierarchical decision-making structures isolated from other groups with a legitimate interest in education policy needs to be seriously reconsidered.

Devolution of Administration to Regional Offices

In Chapter 2 the extent of devolution of administrative responsibilities from central to regional offices was described and discussed. From the late 1960s and through the seventies, in each of the six State government education systems and in the administration of secondary education in New Zealand, regional offices were established and their range of duties gradually broadened. However, this process moved at different speeds in various systems so that by 1980 the responsibilities of regional offices differed markedly between the systems. Bessant (1980) argued that in the Victorian context at least, the process of regionalization was remarkedly uncontroversial amongst the general education community. Whether this was because attention was distracted by what were seen to be more important matters, or whether regionalization was generally perceived to be beneficial, is not clear.

In the main the evidence that is forthcoming suggests that the devolution of responsibilities and authority to the regions should be continued and strengthened. In South Australia where it would appear the devolution of administative responsibilities to regional offices has progressed further than in other systems, there is evidence of a high degree of general satisfaction among school principals with the policies and procedures that have been adopted (South Australia, 1981). In South Australia, in Victoria and in Tasmania, there has been recent advocacy in published reports of increased devolution of duties to regional offices (see TEND, 1978; Victoria, 1980; South Australia 1981;

Tasmania, 1981). In both South Australia and Victoria there would appear to be growing support for the establishment of advisory councils to advise regional directors of education in the carrying out of their administrative duties. It is suggested that these councils will have a broadly based membership comprising people from within the educational service together with persons representing local authorities, employer, community and parent organizations (see South Australia, 1981, Victoria, 1980). In addition, it is envisaged that some of the support services for the schools that are currently centrally based should be transferred to the regional offices (see Victoria, 1980; South Australia, 1981; Tasmania, 1981).

Devolution of Authority to Schools

In Chapter 2 information on the increasing devolution of responsibility for the administration of the affairs of schools was presented. In some systems greater responsibility has been given to the principal, in other systems to the principal and school council. It was also noted that in New Zealand the school board at the secondary school level has traditionally had responsibility for the appointment of the principal and staff to a school, and in Victoria, the school council is involved in the selection of the principal and vice-principal of technical schools. The range of responsibility that is delegated to schools for financial matters varies considerably between systems, but there would appear to be a growing acceptance, at least in both South Australia and Victoria, of continuing to enhance the role of school councils in both policy development and implementation.

In general, these policies seek to make the school and its staff more directly accountable to the community which the school serves. For example, the opportunity to be involved in the selection of the principal and staff for a school should help to ensure that appointments are made that are consistent with the aims and curriculum of a school and local community needs. Likewise, the involvement of the school council in building design and the provision of facilities should help to ensure that appropriate buildings and facilities are obtained by a school. Furthermore, the exercising by a school council of responsibility for maintenance and minor works should assist the more efficient provision of these services.

Nevertheless, the introduction of such policies may lead to the development of recognizable differences between those schools that are able to be well served by their school councils and communities and those that are less fortunate. What is required in such circumstances is a mechanism by which the needs of a school might be assessed and supplementary services provided to ensure that all schools reach a minimum acceptable standard.

It is probable that the role of the school in appointing its teaching staff will gain increased attention in the future. One of the consequences of the devolution of curriculum responsibility to schools is that a diversity of school programs may eventuate. For this reason alone, schools are likely to wish to be involved in determining the configuration of the teaching staff. An increased diversity of school programs is also likely to generate demands from parents for the removal of restrictions which zone students on a residential basis to particular schools. Such restrictions have been removed in South Australia and the Australian Capital Territory and trials of dezoning are being conducted in certain areas in several other systems. Dezoning is likely to increase further the determination of the principal and the school to influence the nature of the teaching staff, not only in terms of its seniority and subject specialization configuration, but also in terms of the compatability of individual teaching philosophies and methodologies with the overall program of the school. It is perhaps not coincidental that in New Zealand where zoning restrictions do not apply, secondary schools have long played an important role in the selection and appointment of teaching staff.

While considerable advantages may flow from an increase in the role of government schools in the selection and appointment of teaching staff, there are potential risks for both the schools and the teaching service should this role be extended to one of the school acting as the employing authority. Such a situation has the potential to create administrative and legal difficulties for the school, and perhaps more importantly, would remove from the teacher a measure of the security and career structure that are possible only with a large centralized employing authority. In this regard it is relevant to note that even in those systems where the individual school plays a major role in the determination of the configuration of its ancillary staff allocation, the school is not the employing authority of ancillary staff.

The Structure and Size of Schools

It was demonstrated in Chapter 3 that in the post-war period there had been extensive changes in the school structures of the government education systems of Australia and New Zealand. These changes were fostered by what were perceived to be educational and/or financial benefits arising from modifications to existing structures. These two themes are also apparent in the current debate about the appropriate size and structure of schools. There are those for example, who argue that declining enrolments in particular schools or groups of schools, may adversely affect the financial viability of maintaining these schools in such a way that some amalgamation of the schools may be necessary. From an educational perspective, others argue that the increased diversity of students at the upper secondary school level may necessitate the design of new structures more appropriate to their educational and social needs. In the section which follows, some of the principal options for modifications to school size and structure are briefly canvassed.

Combining Primary and Secondary Year Levels

From a purely economic perspective, the blurring of the lines between the upper years of the primary school and the lower years of the secondary school has some potential benefits. As was demonstrated in Chapter 4, in most systems, it is expected that government primary school enrolments over the period to about 1985 will decline while those in the secondary sector will increase, and that over the last part of the decade these trends will be reversed such that the primary sector will experience a slight upturn in enrolments, while in the secondary sector there will be a relative decline. If these projections eventuate, over the next few years the primary sector in most systems may have some excess capacity, while the secondary sectors will experience some pressure upon their resources, and that over the period between 1985 and 1990 this position will be partially reversed. Under these circumstances, it could be beneficial in financial terms to retain in to primary schools some of those students who would otherwise have moved onto secondary schools. This would have the financial advantage of lessening the need to expand the capacity of the secondary school sector to meet the expected increase in enrolments over the next few years, a capacity that may be under-utilized by 1990 when in most systems secondary school enrolments are projected to lie below their 1980 levels. It would also have the advantage of lessening the need to wind back the capacity of the primary school sector over the period to the middle of the decade, and thereby lessen the difficulties associated with attempting to increase the capacity of the primary system to cope with the expected increase in primary enrolments over the last part of the decade.

Means suggested for implementing such policies have been to delay the entry of some primary school students to secondary schools by one year, or encourage some primary school teachers to work in secondary schools (Burke et al., 1981). Later on, the policies could be reversed by, for example, encouraging the transition of some primary students to secondary school at an earlier age and/or encouraging some secondary teachers to work in primary schools. Aside from the financial advantages that could accrue from such policies, they could allow more effective use of the available supply of teachers. There is also the possibility that valuable cross-fertilization of teaching philosophies and methodologies could eventuate.

However, several cautionary points need to be made in regard to policies concerned with the amalgamation of some elements of primary and secondary schools. First, as was argued in Chapter 4, it is unlikely that enrolment changes will be uniform across systems. Accordingly, the usefulness of such policies for particular groups of schools would need to be carefully assessed. Secondly, delaying the entry point to secondary school may adversely affect the developmental process in ways that may not be readily envisaged. Further investigation into this issue would appear to be essential before any broad policies were adopted. Thirdly, the anticipated financial benefits which provide the rationale for such policies may not always be obtained, particularly if modification of buildings and equipment is necessitated.

These considerations suggest that before the wide-scale adoption of these and similar policies, it would be necessary to trial the proposals in a small number of schools. Some of the experiences of the small number of integrated primary and secondary schools that have been recently established in Adelaide on a trial basis could be illuminative in this regard. It needs to be stressed that if policies which affect the point of transition to secondary school and which affect the sectors in which particular teachers work are to be successfully implemented, they will need the full co-operation and support of the parents, teachers and students involved.

Size of Schools

Related to the argument about the possible financial advantages of combining some of the year levels of primary and seondary schools is the relation between school size and the operating costs of schools. As was shown in the previous chapter, across the eight education systems there is generally an inverse relation between school enrolment size and the per student costs of operating the schools. The inverse relation is not however linear but is more closely approximated by a hyperbolic function, which suggests that beyond certain enrolment levels a further increase in the size of the school is not likely to be associated with significant decreases in per student operating costs. Across the eight education systems, it was suggested that for primary schools such a point was reached in the enrolment range of about 300 to 400 students, while for secondary schools the equivalent point would be in the range of 800 to 1000 students. The extent to which these enrolment ranges applied to particular systems would, of course, need to be tested by a more thorough study of the full range of recurrent and capital costs associated with the schools in that system.

In terms of the effect of school size upon students, Skidmore (1981) summarized his review of the school size literature in the following terms:

> . . . most studies have supported the concept that larger schools provide more subject areas, more courses per subject area, and more total courses . . . (however) . . . studies on the relationship of achievement to school size, although numerous, have been contradictory and inconclusive . . . research on the affect of school size on extra-curriculum activities and social interaction have strongly supported the benefits offered by the smaller school. (Skidmore, 1981:30-31)

With regard to the effects of school size upon the attitudes and teaching conditions of teachers, Skidmore reported that research indicated:

> . . . as schools become larger, the teaching load decreases, but class size increases, while small schools generally provide smaller class size, but heavier teaching loads . . . (and) . . . Australian studies conducted by Campbell have strongly supported the hypothesis that smaller schools do encourage closer professional interaction and greater satisfaction amongst . . . teachers. (Skidmore, 1981:31-32)

While the results of a number of the school size studies are inconclusive and comparison of the studies is made difficult by differing definitions of small and large schools, the research evidence on the effects of school sizes when taken in conjunction with the hyperbolic form of the relation between school size and per pupil costs have been sufficiently persuasive to lead different official enquiries to conclude that optimal school sizes were to be found in approximately equivalent enrolment ranges. For example, in the 1971 Karmel Report, it was concluded that:

> a Planning should proceed on the basis of eliminating primary schools of more than 600 pupils in the total span of their seven grades.
>
> b Secondary schools should not exceed 1,000 pupils and, the maximum size should be near 800 where possible. (South Australia, 1971:203)

In the report of the TEND Committee in Tasmania, it was suggested that:

> 1 . . . a school of 400 full-time students is a size which would be the most productive of teacher and pupil satisfaction, community involvement and the economic effective deployment of educational services, and
>
> 2 schools should be planned to accommodate between 300 and 500 full-time students, and should, in no case, be allowed to reach the category of 750+ full-time students. (Tasmania, 1978:45)

It was refreshing to see that the Tasmanian TEND Committee recommended a minimum size of schools below which schools may experience difficulties in achieving economic and educational viability, since most analyses of the school size issue concentrate upon identifying the enrolment level beyond which schools should not increase in size. The assessment that schools with less than about 300 students may find difficulty in achieving economic and educational viability raises important issues for those systems which have a relatively large number of such schools. Attempts to consolidate small schools into larger units will, in particular areas, be frustrated by community opposition to the loss of local schools. In addition, as noted by Hind (1975), the economic gains from consolidation of small primary schools in rural areas will in a number of instances be more than offset by increases in the costs of student transportation. As part of a response to this situation, several systems which possess a relatively large number of small schools have attempted to extend the range of advisory and support services that small schools, particularly those in rural areas, may call on.

In attempts to devise alternative forms of school structures to meet the diversity of student needs, particularly at the upper secondary level, the question of relative costs will be important since in general, the wider the range of programs which it is planned to offer to students, and the more extensive the range of capital facilities and equipment which is needed to support these programs, the larger will need to be the size of the school unit in order to achieve reasonable per student cost levels. This eventuates because a wide diversity of programs within the one institutional setting is likely to be associated with relatively high fixed costs, and in this situation the financial viability of the institution could necessitate relatively high enrolments. If this is not possible or if it is believed that large enrolments could result in less rewarding environments, an alternative approach could be to encourage a diversity of specialized institutions rather than a diversity of programs within the one institution. The clusters of schools approach currently being tried in some localities in South Australia could provide useful information on the educational and financial feasibility of schools specializing in particular subject areas and students moving between them as the need arises.

The Allocation of Resources to Schools

The basic question in considering the allocation of resources to schools is one of how best to supply resources to schools so as to satisfy their educational needs within overall resource constraints. It is apparent that at the same time as there is a diversification of the educational needs of schools there are also many pressures constraining the resources made available to schools.

The past decade has seen a shift to school-based curriculum development. As a consequence, some schools are developing different philosophies, aims and goals. These have resulted in different types of needs and innovative school programs and organizational structures. The introduction of the innovations program by the Schools Commission gave schools the encouragement and the necessary support to develop new initiatives and innovatory practices. Many exciting changes have been made, and the staff of schools have become accustomed to expecting such innovations to continue as well as the development of further innovations to meet changing needs. However, with the termination of the Innovations Program of the Commonwealth Schools Commission, the thrust towards innovation in the schools must be sustained out of the recurrent resources made available to schools.

Allowance for the differences between schools has become one of the most challenging problems facing education. The schools and their staffs are often faced with groups of children who come from widely different socio-cultural backgrounds, with different ranges of experiences, with different social and emotional drives to succeed at school and to continue with further education, and with significantly different career and life prospects. Perhaps it is a truism to say that no two schools are alike, but it is increasingly accepted that no two schools should have exactly the same programs and courses of instruction or should provide identical experiences for all children with them. As a consequence each school must identify the needs of its own students and develop its own programs and curricula to meet those needs. This is not to deny that many schools may have much in common. Nevertheless, it involves the endorsement of a need for school-based curriculum development, built around what is recognized as common between schools within a system.

A Basket of Resources Approach

There is probably more chance of a school being able to implement effectively the programs and curriculum that it has developed for itself when it has some say in the number and type of staff who are engaged to carry out the work involved. Thus, the now traditional policies that have evolved to ensure that each school is treated uniformly in its provision of staff and resources, must to some degree be revised. It is necessary to conceive of new policies and practices to provide an opportunity for the school to select or otherwise obtain staff who would meet the particular needs and requirements of that school.

One possible option the is what could be termed a basket of resources approach. In principle this would involve a similar procedure to those which operate in in the ACT, South Australia and New Zealand where schools have considerable autonomy in determining the configuration of ancillary staff.

The personnel and material resources formulae that currently apply could be modified to develop a basket of resources schedule for the three major resource categories of teaching staff, ancillary staff, and materials and equipment. Depending upon the type of school and the size of its enrolment, these schedules would prescribe the minimum quantity of each resource which schools are entitled to receive. For example, a secondary school with 1000 students could be entitled under the teaching personnel basket of resources schedule, to the allocation of say, 100 teacher units. Each seniority and subject classification of teacher would be determined by the central authorities to be equivalent to a certain number of teacher units; for example, teachers in promotion positions could be judged to be the equivalent of 2.5 teacher units, and assistant class teachers 1.5 units. Thus, in the hypothetical example, the secondary school with 100 teacher units at its disposal could allocate these such that the Education Department appointed, at one extreme, 40 teachers in promotion positions or 66.7 assistant class teachers, or more realistically, the school could opt for a combination of these seniority classifications, such as 10 promotion positions and 50 assistant class positions in order to use up its quota of 100 teacher units.

It is possible to envisage similar basket of resources schedules being devised for the allocation of ancillary staff to schools. Indeed, as was noted in Chapter 5, in the schools of the ACT, South Australia and New Zealand, procedures not all that different to the basket of services approach currently operate in the allocation of ancillary staff to schools. In the case of materials and equipment, rather than determining a number of units to which particular schools are entitled, it may be more appropriate to allocate schools a quantity of finance with which such items could be purchased.

Undoubtedly, problems would arise in the determination of the baskets of resources schedules and the relative weighting of various personnel and material resource categories. However, there is no reason why the relative entitlements of schools under this approach should differ from the relative levels of resources which currently apply. As was shown in Chapter 5, secondary schools receive more staff than primary schools of the same size, and that smaller schools in both sectors receive proportionately more staff than do larger schools. These relative weightings could also be incorporated into the determination of the resource entitlements of schools under the basket of resources approach. As a first move towards the introduction of the baskets of resources approach, it would seem possible to employ such procedures to provide the materials and equipment required by schools. In such a way it would be possible to gain experience in the administration of the approach without encountering the more complex problems that are associated with teaching staff and ancillary personnel.

It should be noted that while the basket of resources approach entails a significant increase in the role of the school in the determination of the configuration of the teaching staff most appropriate to its needs, it is not suggested that this necessitates the school becoming the employing authority. As was argued earlier, for government schools to act as employers could lead to significant problems for both the schools and the teaching service as a whole. However, there can be advantages where the school is more able to determine the particular persons that are appointed to its staff, and that these advantages apply under a basket of resources or any other resource allocation approach. The following procedure could apply for the appointment of particular personnel to schools. In those systems where school councils exist, these bodies should be encouraged to play a major role in the selection of the principal and possibly of other senior staff. A system similar to that which operates in Victorian technical schools provides a worthwhile model. In these schools, a short list of applicants for the principalship are interviewed by a committee comprising representatives of the school council, representatives of the teaching staff, the principal who is vacating the post, a principal from another school, and an Education Department representative. This committee then forwards to the central appointments board their desired preference amongst the applicants, and it is this body which makes the final appointment. All appointments are subject to appeal. It would appear that in the great majority of instances the central appointment board concurs with the decision of the interviewing committee, and the evidence would suggest that all relevant parties express satisfaction with the operation of the system. This selection procedure has recently been extended to the selection of vice-principals for Victorian technical schools. In terms of the less senior positions on the teaching staff, a similar procedure could operate, with the exception that perhaps the balance of the interviewing committee could be modified to meet different circumstances. For example, subject co-ordinators could be expected to play a more important role, and the school council a less important role, in the selection of general classroom teachers.

Topping the Baskets

Some schools have greater access to funds raised at the community level through the sharing of facilities, fees from parents, fund-raising programs, and charges for the use of school facilities. Other schools have greater need because the communities they serve contain a high proportion of those who are disadvantaged in socio-economic terms. In addition, schools that cater for students at different age levels have different educational requirements. The conducting of classes at the upper secondary school level, particularly if a wide range of curriculum offerings is maintained may be significantly more expensive than the conducting of classes at the lower secondary school level.

As was elaborated in Chapter 5, each system currently makes provision for the above-formulae allocation of personnel and other resources to meet the special needs of schools. This practice would also need to be continued where the basic allocation of resources to schools was determined by a basket of resources approach. Two broad approaches are possible. The basket of resources schedule could be adjusted upwards for schools that were judged to have particular needs. The current practice of additional resource allocation being built into the staffing schedules for classified disadvantaged schools in New South Wales, and for notional roll schools in New Zealand provide examples of this approach. Another method could involve the allocation of a designated proportion of the personnel and material resources of an education system to a needs pool. In smaller systems, this could be a system-wide pool, while in larger systems the pool could be organized on a regional basis. Schools would then be encouraged to prepare submissions to needs committees for an allocation of resources from that pool. Once again, the precise allocation mechanisms could be determined on a basket of resources approach whereby the needs committee would allocate a quota of resource units to schools whose submissions were accepted, and these resource units could be used to acquire additional resources from the needs pool. The description in Chapter 5 of the operation of the system-wide pool in the ACT provides a most useful illustration of this approach. A prospective review of schools could provide an appropriate mechanism for assessing school needs.

The Prospective Review of Schools

One possible option which combines both aspects of planning for the future and a retrospective examination of the past program of a school, is what could be called a prospective review process. One model for a prospective review is as follows: a school principal and staff, in collaboration with the school council, would develop policy statements for a school, including the general goals, the curriculum objectives, more detailed specification of courses of instruction, teaching methods and assessment procedures to be employed by the school, as well as statements on non-curricular and extra-curricular facets of the school's program. In the course of the development of these statements consultations with parents, students and the wider community would take place, and some internal evaluative studies of specific aspects of the school's program would be carried out. In addition, the principal and staff of the school would prepare submissions on the staffing and resource needs of the school for the coming triennial period. All documentation would be submitted to an external panel, which could comprise people such as the principal of another school, a member of staff of a regional office, a person from the central administration and an expert external to the system. This panel would undertake an evaluation of the school, assessing the progress it had made in terms of its stated goals over the past three years as well as examining its proposed policy statements including its general goals, curriculum objectives, courses of instruction and so on. In the light of this evidence the panel would make an assessment of the needs of the school for the coming triennium, its claims for supplementary grants from State funds, from the Commonwealth Schools Commission disadvantaged schools program and other similar Commonwealth programs and the level of priority to be given to those claims. This information would then be used to determine the level of supplementation to be provided to the school from each of the different sources for the ensuing period of three years.

The advantages of such a prospective review are that it would combine the need for a regular review of a school with the need for forward planning and the submission of claims for additional staff and resources in order to maintain an educationally effective program. Furthermore, in the Australian context it may eliminate some of the duplication through which a school makes submissions to both State and Commonwealth authorities for support. It would be desirable for some schools to come into the review cycle each year, so that the heavy load of evaluation was spread over a three year period. The disadvantage of this review process might be that some schools would be out of phase for the submission of applications associated with new initiatives. However, such problems should be capable of resolution. Thus a more equitable distribution of limited resources could be made not solely in terms of the skill with which a school is able to prepare submissions, but also in terms of the known and assessed needs of the school for supplementary support.

In Conclusion

This study of eight education systems in Australia and New Zealand, has examined organizations that are not static but in the process of change from one year to the next. There are important questions associated with the direction and nature of change and also with the critical issue of the rate at which change, should take place. The past decade has been one of substantial change. It was preceded by a decade in which the Australian Education Council had undertaken an assessment of the needs of Australian education issued in 1963 (Australian Education Council, 1963). The Council's evidence indicated five serious deficiencies:

1 schools were short of qualified teachers;
2 many teachers were inadequately trained and qualified;
3 States were finding it difficult to provide the new accommodation needed by schools;
4 there was a large accumulation of makeshift, substandard, and obsolete school accommodation; and
5 equipment and supplies of all kinds were required in increasing numbers.

Following the Unesco Seminar on planning for education in Australia in 1968 (Bassett, 1970) the Australian Education Council decided that each State should undertake a survey of its needs for a period of five years, and a summary statement was published in 1970 under the title of a Nation-wide Survey of Educational Needs. This survey revealed a deficiency of more than $1400 million dollars between what was regarded as desirable for expenditure on education in Australia over the five year period, and what was likely to be available. It was in this climate that the Interim Committee of the Australian Schools Commission was set up to report as soon as possible to examine the financial needs of both government and non-government schools in Australia.

Many of the more serious deficiencies of Australian education have been tackled following the injection of funds from the Commonwealth Government into the programs of the States. The availability of this money has also permitted other problems to be tackled, and the greater devolution of responsibility for the conduct of education to both regional offices and to schools and school councils has flowed from the changes made possible by the greater availability of funding to meet the needs of the schools and their students.

Some of the evidence presented in this report suggests that the education systems have moved at varying speeds and at times in different directions. Such variation has given rise to a situation in which experimentation and change are occurring naturally in different settings. As a consequence the opportunity is available to monitor the changes that have occurred and to examine their consequences for educational practice. While some evaluation studies have been undertaken they have in the main, been related to particular aspects of the changes that have occurred. There has been little work done to examine the consequences of policies of regionalization, of school-based curriculum development or of the establishment of school councils. It would seem important for the natural experimentation that is occurring to be monitored and evaluated so as to provide information on which the nature, direction and rate of change in the future might be based. This report is a step in that process.

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APPENDIX II

CLASSIFICATION OF TEACHERS

When discussing teacher numbers and teacher allocation policies in eight education systems each of which employs a different means of classifying their teaching force, it is necessary to devise a set of teacher categories that allows meaningful comparative statements to be made. An examination of the teacher classification nomenclature employed by each system, reveals that in general the teaching service comprises four fairly distinct groups. We have termed these groups, in descending order of seniority, as principals, deputy principals, senior teachers, and assistants. These terms were chosen because they were the most commonly used in the eight systems to describe the four groups under consideration.

In allocating a particular teacher classification employed by an education system into one of these four categories the principal criterion was that of relative salary level. Thus for example despite the fact that in some systems the teacher in charge of a two-teacher school may be designated as a 'principal', in the following schema he would not be as equivalent to a principal unless his salary was relatively close to that of the highest paid principals in the same system. In exercising this judgment particular difficulties occurred with the categorization of teachers classified as senior teachers, deputy principals, and principals. It became apparent that in a number of systems while some teachers may have been designated as a deputy principal for example, their salary was equivalent to that of one of the senior teacher classifications in the same system. In this instance the teacher concerned would be categorized as a senior teacher in the scheme which follows. The basis for such judgements is made explicit in the table which follows by the listing of the salaries payable to the classifications. In this regard the following points should be noted:

1 the salaries are those applying as at October 1980;

2 Austrlaian salaries are expressed in Australian currency, and New Zealand salaries are shown in New Zealand dollars;

3 where a salary scale for a particular teacher classification comprised a number of increments, the salary shown is the mid-point of the relevant section of that scale. The relevant part of the scale was taken to be bounded by the normal commencing salary and the maximum salary point which teachers normally reach on the scale;

4 where commencing salary and maximum salary on a particular salary scale were determined by level and length of pre-service training, it was presumed, unless otherwise indicated, that the normal pre-service course for primary teachers was 3 years in length, and that secondary teachers were normally graduates who had completed 4 years of pre-service training;

Table A.2 Teacher Classifications and Salary Levels, Australia and New Zealand 1980

	Category	Equivalent Classification and October 1980 Salary	
		Primary	Secondary
Australian Capital Territory	Principal	Band 4 ($25676)	Band 4 ($27652)
	Deputy Principal	Band 3 ($21433)	Band 3 ($23173)
	Senior Teacher	Band 2 ($19435)	Band 2 ($21005)
	Assistant	Band 1 ($14425)	Band 1 ($16153)
New South Wales	Principal	P1($25551),P2($21128)	PH($28066)
	Deputy Principal	MA($20801),DPI($20801),P3($20594)	DP($23727)
	Senior Teacher	DP2,AP,MB($19735),DM/M($19121)	SM($20801)
	Assistant	Assistant ($14490)	Assistant ($16268)
Victoria	Principal	PA($25360),PB(22545)	PA($26892),PB($24317),DPA($24055)
	Deputy Principal	DPA,Special VP($22114)	DPB($22114)
	Senior Teacher	ST($20507)	ST($20507)
	Assistant	Assistant($13709),Assistant with Responsibility ($17907)	Assistant($15017),Assistant with Responsibility ($18037)
Queensland	Principal	P1($25324),P2($23985),P3($22576)	P1($28460),P2($26676)
	Deputy Principal	P4($21463),DP($19926)	DP($23517)
	Senior Teacher	SM,IM($19157)	SM($21731),Sub M($21315)
	Assistant	Assistant ($14534)	Assistant ($16738)
South Australia	Principal	PA($27733),P1($25388),P2($23566)	PA($30467),P1($27418),P2($25388)
	Deputy Principal	DP,P3($20685)	DP($23566),Special Senior($22216)
	Senior Teacher	not applicable	Senior($20685)
	Assistant	Assistant($14148)	Assistant($15525)

		Equivalent Classification and October 1980 Salary	
	Category	Primary	Secondary
Western Australia	Principal	P1A($23600),P1($22447),P2($20810)	PA($28177),PB($27160)
	Deputy Principal	P3($19354),DP1A($19022),DP1($18258)	DPA($24093)
	Senior Teacher	not applicable	DPB($21726),SM($21425)
	Assistant	Assistant ($14841) Teacher-in-Charge, Class 4 school ($15999)	Assistant ($16268)
Tasmania	Principal	P7($26585),P6($25007),P5($23529)	P6($27579),P5($25736),P4($24829)
	Deputy Principal	VP2($22284);VP1,P4,IM3($22055); P3,IM2($20141)	VP3,P3($23232); VP2($22256), VP1($22024)
	Senior Teacher	ST2($19797);ST1,IM1,P1,P2,($18588)	P2($21481),SM2($20892);SM1, P1($19797)
	Assistant	Assistant ($14085)	Assistant ($15866)
New Zealand	Principal	Principal (Scale D). D2($22326), D1($21440)	Principal (Scale J4). PD($29700), PC($27414),PB(24951)
	Deputy Principal	Deputy Principal (Scale C). C3($18435),C2($17724),C1($17016)	Deputy Principal (Scale J3). DPD($24326),DPC($23392),PA($22612)
	Senior Teacher	Senior Teacher (Scale B): Q2 qualifications. B4($15494), B3($14967),B2($14553),B1($14007)	DPB($22305),DPA($21220),SMD($22460) SMC($21838),SMB($21220),SMA($20606)
	Assistant	Scale A: Q2 qualifications. A($11605)	Scale J1: G3 qualifications. J1($14592),PR1($15049),PR2($15811), PR3($16568),PR4($17620)

Sources: Education Department publications.

5 where classifications such as positions of responsibility carry a salary which comprises an assistant's salary plus responsibility allowance, the salary shown as applicable to the position of responsibility takes as its base the normal maximum point on the assistant's salary scale, except for New Zealand where the relatively large number of positions of responsibility makes it more appropriate to add the allowance to the mid-point of the assistant's scale;

6 classifications that apply only to staff in combined primary and secondary schools are not shown;

7 the following abbreviations are used:

P - principal
DP - deputy principal
VP - vice-principal
AP - assistant principal
DM - deputy master/mistress
IM - infant mistress
SubM - subject master/mistress
SM - senior master/mistress
ST - senior teacher

8 where a promotions position has more than one classification, this is indicated by the relevant symbol. For example, PA should be read as principal class A, and DPI as deputy principal grade 1.

Following Table A.2, which provides the classification and salary levels of teachers in the eight systems, is a listing of the source documents and assumptions employed in deriving the categorization of teachers by school type and enrolment level.

Sources for Categorization of Teachers

Australian Capital Territory

Primary source: Professional Staffing of ACT Schools, 1980.

Secondary it was assumed that the 1979 allocation of promotion positions to high schools and colleges of 8 Band 2. 3 Band 1 and 1 Band 4 also applied in 1980.

New South Wales

Primary source: Executive Staffing of Primary Schools, in Supplement to Staffing Letter A, 1979.

Secondary on the basis of Regulation 34 detailed in the Handbook Book 2, it was assumed that schools with between 200 and 600 students receive four subject masters/mistresses, those between 600 and 800 students receive six, between 801 and 1000 students receive seven, and schools with more than 1000 students receive eight. It was further assumed that one special master/mistress was appointed when enrolments reached 700 students, and that two were appointed to schools with more than 1000 students.

Victoria

source for both primary and secondary: material supplied by the Planning Services Division of the Education Department to supplement the System Level Report.

Queensland

Primary source: Primary Staffing Scale 1980.

Secondary source: Secondary Staffing Scale 1980. To derive the relationship between the numbers of certain categories of subject masters and total school enrolment, where the appointment of such personnel was not directly related to total school enrolment, it was assumed that the proportion of all students engaged in particular subject areas was as follows: Social Science (75%), Commerce (50%), and 33% for each of Manual Arts, Foreign Languages, Home Economics, and Art.

South Australia

Primary source: Circular to Schools, R-7 Staffing 1980. To determine the distribution of principals amongst schools, it was assumed that class 1 principals were appointed to class 1 schools, class 2 principals to class 2 schools and class 3 principals to class 3 schools. It was further assumed that the first deputy principal was appointed once the school enrolment reached 200.

Secondary source: Circular to Secondary Schools, Staffing 1980. Because of the difficulty of determining schools with class A principals from system level data, for the cost calculation it was assumed that class A and class 1 schools were appointed class 1 principals and class 2 schools were appointed class 2 principals.

Western Australia

Primary source: Education Act (1971), Regulation 157.

Secondary source: Education Act (1971), Regulation 187.

Tasmania

Primary source: System Level Report and additional material supplied by Research Section, Education Department.

Secondary source: as for primary. It was assumed that in addition to a class 4 principal, class 2 schools were also allocated a class 1 vice-principal and four class 1 senior masters/mistresses. Class 1 schools it was assumed were allocated a class 5 principal, class 2 vice-principals and class 1 senior masters/mistresses. It was also assumed that class 1A schools were appointed a class 6 principal, class 3 deputy principals and class 2 senior masters/mistresses.

New Zealand

Primary & Intermediate	source: Education (Salaries and Staffing) Regulations: Third and Fourth Schedules respectively.
Secondary	source: Staffing of Secondary Schools, sections 16.3.7 and 16.5.3. Salary data for each group of teachers derived from supplement to Education Gazette, 1 October 1980.

APPENDIX III

DETAILED NOTES TO TABLES, 3.2, 3.6, 5.1 and 5.4

Symbols used in the Tables:

n.a.	not available
..	not applicable
-	nil or rounded to zero

Table 3.2

Queensland

w Education Department managed pre-primary activities include provision for the disabled.

x The data sources do not provide an age distribution relevant to this table other than the category 'aged less than 6 years'; it has been assumed that all such students are aged between 5.0 and 5.11 years. Enrolments in schools operated by the Department of Aboriginal and Islanders Advancement are excluded.

y It has been assumed that the age distribution of children in non-Education Department managed pre-primary activities is the same as that applying in Education Department activities.

z As for Note x.

Sources: Annual Report of the Education Department, 1979; ABS, Schools Australia 1979 Cat. No. 4202.0.

South Australia

Source: South Australia (1981).

Western Australia

w Includes pre-primary classes at non-government schools and at independent and community pre-school centres; while some of the latter are located on Education Department property in the main they are not managed by the Education Department.

Source: Annual Report of the Education Department, 1979; Smart and Alderson (1980).

Tasmania

w Includes enrolments in 'special' and kindergarten programs.
x Includes Preparatory class enrolments.
y As for Note w.
z As for Note x.

Source: Annual Report of the Education Department, 1979.

New Zealand

w Most of these children are enrolled in Kindergartens who receive a large proportion of their funding via the Education Department budget.
x Includes some enrolments at private schools.
y Comprises enrolments at playcentres.

Source: Education Statistics of New Zealand 1980.

Table 3.6

General:

a Reference dates are 1 August for Australia and 1 July for New Zealand. The data exclude pre-primary and evening classes, and correspondence and special schools.

Australian Capital Territory

x Includes the School Without Walls which enrolled 36 high school and 38 secondary college-aged students.

Victoria

x Includes three secondary students.
y Comprises 4193 primary and 1353 secondary students.
z Includes technical-high schools.

Queensland

x Includes 12 schools controlled by the Department of Aboriginal and Islanders Advancement which enrolled 483 students.
y Comprises 13602 primary and 6468 secondary students.

South Australia

v Includes 13 schools for aborigines which enrolled 667 students.
w Includes 154 secondary students.
x Includes 5 secondary students.
y Comprises 332 primary and 94 secondary students.
z Comprises 9309 primary and 5143 secondary students.

Western Australia

v Includes 19 special aboriginal schools, 7 of which have some secondary enrolments, and 18 other primary schools with some secondary enrolments.
w Includes 520 secondary students enroled at primary schools and primary correspondence students.
x Comprises 10567 primary and 4299 secondary students.
y Includes three special aboriginal schools.
z Includes secondary correspondence students.

Tasmania

x Includes four district schools that do not enrol secondary students.
y Includes two district schools that enrol secondary students.
z Comprises 5919 primary and 2773 secondary students.

New Zealand

x Year levels expressed in Australian equivalent terms.
y Comprises 4976 primary and 4500 secondary students.

Table 5.1

a Excludes access to teachers from the ACT special needs pool.

b Up to and including enrolments of 300, the data were derived from the staffing formula for ordinary (i.e. those not classified as 'disadvantaged') one-department primary schools. For enrolments of more than 300 the staffing scales for ordinary infant departments and ordinary primary departments were combined to derive a total entitlement; for this purpose it was assumed that the infants department comprised 45 per cent of total school enrolments as was the state-wide proportion in August 1979.

c The data include the local reliever(s) appointed to schools with at least 400 students. It was assumed that objectives of appointing music teachers to schools with at least 600 students, and teacher-librarians to schools of at least 300 were achieved. It was further assumed that physical education teachers were allocated on a 0.6 basis to schools with at least 300 students, and that a school became eligible for an Infant Mistress when total school enrolment reached 700. The latter figure was derived from the fact that approximately 30 per cent of August 1979 state-wide primary enrolments were in the infant year levels.

d Applies to R-7 primary schools only. It was assumed that the objective of appointing at least a part-time teacher-librarian to primary schools with more than 200 students was achieved.

e Derived from staffing schedules applying to primary schools with a full spread of year levels; includes regulation, administrative relief and specialist teachers allocated according to formula. Staffing schedules were not available for schools with more than 855 students.

f Although pre-school (kindergarten) classes and teachers are not included, senior staff are allocated on the basis of total school enrolments from kindergarten to Year 6. To derive the senior staff allocation it was assumed that kindergarten enrolments comprise 4.5 per cent of total primary enrolments, as was the state-wide proportion in August 1979.

Table 5.4

a Includes the basic teaching staff plus an entitlement to 0.28 teachers per 100 enrolments (or part) above 750 for administrative relief.

b Includes the basic teaching staff plus an entitlement to 0.28 teachers per 80 enrolments (or part) above 600 for administrative relief.

c Applies only to ordinary secondary schools (i.e. those not classified as 'disadvantaged'). To derive total school entitlements it has been assumed that the distribution of students across year levels in individual schools approximates the 1979 state-wide distribution across year levels, and that classified activity students represent 20 per cent of enrolments in each of Years 7, 8 and 9. To calculate the executive staff allowance of each school, it has been assumed that in addition to one principal and deputy principal, secondary schools with enrolments below 600 receive 4 senior masters/mistresses, those between 600 and 800 students receive six, between 801 and 1000 receive seven, and enrolments of more than 1000 entitle a school to eight or more senior masters/mistresses. It has also been assumed that the Year 12 staffing schedule is equivalent to that applying to Year 11.

d For secondary schools with less than 300 enrolments the schedules are complex and depend upon the number and composition of year levels.

e Excludes teacher entitlements arising from TAFE enrolments. The data should be treated with some caution since the multi-sectoral nature of many technical schools means that enrolments are but one component in determining the schedule for a given school. The basic schedule which has been utilized to derive the data stipulates a minimum entitlement of one teacher for each 14 students (or part) in addition to a principal and at least two other senior administrative positions.

f To derive total school entitlements it has been assumed that the distribution of students across year levels approximates the 1979 state-wide distribution of secondary students across year levels. The total entitlement comprises basic teaching staff (including senior masters and mistresses), plus 3 senior administrative teachers, guidance officer and teacher librarian according to formulae. Although most high schools would also have a youth education officer, these have been excluded from the table since such personnel are not automatic entitlements but are appointed in response to a school submission.

g It has not been possible to derive a separate schedule for senior secondary colleges in Tasmania. The Education Department has stated however that the colleges (whose enrolments range between 300 and 800 students) are staffed on a similar basis to high schools with the exception that the colleges in general receive a higher number of senior administrative staff than do high schools of the same enrolment size.

h Comprises the basic assistant and senior administrative teacher entitlement plus formula staffing allowances for senior administration, professional supervision, guidance network, head of department, and careers guidance. Also included have been several discretionary allowances which appear to have hardened into entitlements, namely allowances for special needs, instrumental music, guidance counselling, and the Form 6/7 allowance for small schools. Excluded are discretionary allowances relating to students with emotional handicaps, linkages to small schools, homework centres, beginning teachers, assistance with teacher training, work experience, library and pre-employment program; as a guide it could be expected that schools with 300, 870 and 1350 enrolments would respectively receive approximately 0.5, 1.1, and 1.6 additional teachers under these discretionary allowances.